BIBLIOGRAPHY OF
SCIENTIFIC PUBLICATIONS AND PRESENTATIONS
RELATING TO PLANETARY QUARANTINE
1966-1971

April 1973

(NASA-CR-131889) BIBLIOGRAPHY OF
SCIENTIFIC PUBLICATIONS AND PRESENTATIONS
RELATING TO PLANETARY QUARANTINE: 1966
- 1971 (George Washington Univ.) 219 p
HC $13.00

THE GEORGE WASHINGTON UNIVERSITY
DEPARTMENT OF MEDICAL AND PUBLIC AFFAIRS
BIOLOGICAL SCIENCES COMMUNICATION PROJECT
2001 S STREET, N.W., WASHINGTON, D.C. 20009
BIBLIOGRAPHY OF
SCIENTIFIC PUBLICATIONS AND PRESENTATIONS
RELATING TO PLANETARY QUARANTINE

1966-1971

Frank D. Bradley
Marcy R. Nadel

Work Performed under NASA Contract NSR-09-010-027
for
Planetary Quarantine Office, Planetary Programs
NASA Office of Space Science

The George Washington University
Department of Medical and Public Affairs
Biological Sciences Communication Project
2001 S Street, N.W., Washington, D.C. 20009

GWU-BSCP 73-10P
April 1973
This bibliography presents a compilation of citations relating to planetary quarantine, previously listed in similar, separate annual publications, which were begun in 1967. Each such separate issue contained citations from the previous calendar year, forming a bibliography covering that 12-month period. The listings were augmented with references to documents of earlier dates, which had been acquired during the time specified. Bibliographies will continue to be compiled on an annual basis.

This volume, a consolidation of the material of the six previous publications, will, it is hoped, provide a useful reference in reviewing planetary quarantine research and development.

The Planetary Quarantine Office, Planetary Programs, Office of Space Science, National Aeronautics and Space Administration, Washington, D.C., has sponsored much of the research reflected in the citations.
<table>
<thead>
<tr>
<th>CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface .......................................................... iii</td>
</tr>
<tr>
<td>Citations ......................................................... 1</td>
</tr>
<tr>
<td>Permutated Title Index .................................... 103</td>
</tr>
<tr>
<td>Corporate Sources ......................................... 209</td>
</tr>
</tbody>
</table>
CITATIONS


28. ANGELOTTI, R. Status report on $D_0$, $z_0$, and $A_w$ value investigations. Presented before the Planetary Quarantine Committee, NASA, Cape Kennedy, Florida, 2-4 April 1968.


43. AUSTIN, P.R. Clean room personnel. Contamination Control 8(2): 28-31 and 34. 1969.

44. AUSTIN, P.R. Spacecraft preparation and sterilization as state of the art. Contamination Control 6:32,34,35. 1967.


83. BOMAR, M. Notes on the mechanism of the effect of fungitoxic compounds on microorganisms, II. Synergism of the bactericidal effect of certain chemical preservatives and low temperatures. Folia Microbiologia (Academia Scientiarum Bohemoslovenica) vol. 7: 298-305. 1962.


163.

164.

165.

166.

167.

168.

169.

170.

171.

172.

173.

174.

175.


205. COMMUNICABLE DISEASE CENTER. Services provided in support of the planetary quarantine requirements of NASA. 7th quarterly report for period April thru June 1965. Phoenix, Arizona, Department of Health, Education and Welfare. 1965. 3 p.


idem, September 1968. 4 p.

idem, April 1969. 12 p.

idem, September 1969. 3 p.

idem, April 1970. 3 p.


230. COSPAR CONSULTATIVE GROUP, CHAIRMAN. Potentially harmful effects of space experiments. IN: Minutes of the meeting of the Executive Committee on Space Research at the 9th meeting of COSPAR, Vienna. May 1966. 4 p.


280. DOUGLAS, J. Recovery of known numbers of microorganisms from surfaces by swabbing. Laboratory Practice (UK) 17(12): 1336-1337. 1968.


341. FARMER, F.H. Microbiological contamination control in spacecraft sterilization. Presented at the Sterilization Technology Symposium at the 13th annual technical meeting of the Institute of Environmental Sciences, San Diego, April 1966. 4 p.


355. idem, report No. 20. 1968. 21 p.


357. idem, report No. 22 for period April - June 1968. 1968. 16 p.


FAVERO, M.S. Services provided in support of the planetary quarantine requirements of NASA. Presented to a meeting of the Planetary Quarantine Advisory Committee, Raleigh, North Carolina, 11 February 1970. 21 p.


442. GREENE, V.W. and T.J. Quan. Sensitivity of bacteriological detection techniques to low levels of contamination. Applied Microbiology 14: 979. 1966.


481. HALL, L.B. Decade of development in sterilization technology by the United States space program. Presented at the 15th annual COSPAR meeting, Madrid, Spain, May 1972. 9 p.


750.

751.

752.

753.

754.

755.

756.

757.

758.

759.

760.

761.

762.

59


816. NATIONAL COMMUNICABLE DISEASE CENTER. Services provided in support of the planetary quarantine requirements of NASA. Reduction of microbial dissemination; germicidal activity of ethylene oxide; reduction of microbial contamination on surfaces. Evaluation of leakage of microbial contamination from Gemini space suits. 8th quarterly report. Atlanta, Ga., Department of Health, Education and Welfare, Public Health Service. 1967. 5 p.


818. NATIONAL COMMUNICABLE DISEASE CENTER. Services provided in support of the planetary quarantine requirements of NASA. Reduction of microbial dissemination and germicidal activity of ethylene oxide. 10th summary report of progress. Atlanta, Ga., Department of Health, Education and Welfare. 1968. 11 p.


824.

825.

826.

827.

828.

829.

830.

831.

832.

833.

834.

835.

836.


943. PORTNER, D.M. Microbial contamination obtained on surfaces exposed to room air or touched by the human hand. U.S. Army, Fort Detrick, Frederick, Md. July 1963. Protection branch report of test No. 1-64. 9 p.


948. PORTNER, D.M. Use of sporicides and heat to sterilize resins. U.S. Army, Fort Detrick, Frederick, Md. 1963. Protection branch report of test No. 4-64. 7 p.


1004. 

1005. 

1006. 
ROARK, A.L. and M.C. Reynolds. Computerized program for statistical treatment of biological data. 

1007. 
ROARK, A.L. and A.L. Wyer. Interactive computer information system for planetary quarantine for lunar 

1008. 

1009. 

1010. 

1011. 

1012. 

1013. 

1014. 

1015. 

1016. 


86


1209.

1210.

1211.

1212.

1213.


PERMUTED TITLE INDEX

adsorption-desorption of water by bacterial spores and its relat 1023
acid vapor/Sporicidal effect of peracetic 956
activation/Dual meaning of 346
activation of spores of Clostridium welchii/Heat and radiation r 1013
activity of Beta-propiolactone vapor/Effect of bacterial cell mo 546
activity of ethylene oxide/Reduction of microbial dissemination 818
activity of sodium hypochlorite at subzero temperatures/Sporicid 616
(aeolian erosion)Natural space environmental studies 1167
aeolian erosion on microbial release from solids/Effects of 450
aeolian erosion/Release of buried contamination by 61
(aeolian erosion)Release of microorganisms from solid materials 451
aerial fallou during a 2 1/2 year study/Survival of microorgan 947
aerobic and anaerobic bacteria in agar subjected to freezing, di 167
aerosol/Automatic, instantaneous monitor for counting the bacter 293
aerosol chambers with Beta-propiolactone/Disinfection of microbi 7,8
(aerosol)Contamination control handbook 1034
(aerosol)Design requirements for laminar airflow clean rooms and 694
(aerosol)Dry heat resistance of spores of Bacillus subtilis var 145
aerosol in a microbiological safety cabinet/Containment of micro 58
(aerosol)Laminar flow for the neurosurgical operating room. Tec 56
(aerosol)Life in extraterrestrial environments 467
(aerosol)Life in extraterrestrial environments 469
(aerosol)Novel multi-slit large volume air sampler 150
(aerosol)Principles and applications of laminar-flow devices 727
(aerosol)Reduction of microbial dissemination germicidal activit 818
(aerosol)Services provided in support of the planetary quarantin 356
aerosol stabilizers as substitutes for bound water: study of an 1132
aerosols/Sterilizing action of gaseous ethylene oxide. The effec 627
(aerosol)Study of aseptic maintenance by pressurization 186
(aerosol)Study of the application of laminar flow ventilation to 392
(aerosol)Study of the possible movement of microorganisms throug 667
(aerosol)Survival of microorganisms on covered stainless steel i 947
aerosols by a sonic disseminator technique/Production of low con 298
aerosols/Filtration of submicron virus 500
aerosols/Peracetic acid 444
(agar)Improved method for pouring Rodac plates 146
agar spray/Improved technique for microbiology sampling on surfa 862
agar spray technique/Surface sampling with an 575
(AIMP)Anchored interplanetary monitoring platform compilation ma 445
AIMP spacecraft. Part 1/Microbiological burden on the surfaces o 961
AIMP spacecraft. Part 2/Microbiological burden on the surfaces o 962
AIMP spacecraft. Part 3/Microbiological burden on the surfaces o 963
AIMP spacecraft. Part 4/Microbiological burden on the surfaces of (AIMP-D spacecraft)/Decontamination of the (AIMP-E spacecraft)/Microbial decontamination and sampling programs

airborne contamination/Effectiveness of laminar air flow for con

airborne particulate/Comparison of microbial contamination levels

airborne particulate/Monitoring

airborne particulate/Laminar flow for the neurosurgical operation

airborne particulate/Microbiological studies conducted in a ver

airborne particulate/Use of laminar flow for environmental cont

airborne particulate/Stochastic model describing bacterial aerosol concentration

airflow equipment in microbiology/Use of laminar airflow velocity on biocontamination in laminar flow rooms/Effec

air sampler/Novel multi-slit volume

alcohol sporulation method/Evaluation of alcohol sporulation method/Evaluation of

alcohols/Reversible inhibition of spore germination by

(allocation model)/Preliminary quarantine analysis of a possible anaerobic bacteria in agar subjected to freezing, diurnal freez

(anaerobic)/Reduction of microbial dissemination and germicidal activity

Analytical techniques in planetary quarantine and spacecraft ste

analytical techniques in planetary quarantine/Study of

analytical techniques in planetary quarantine/Study of

Antarctic desert soil bacteria exposed to various temperatures a

Antarctic dry valleys/Growth of bacteria in soils from

Antarctic dry valley soil microbial incubation and gas composition

Apollo and contamination control. Boeing's role

Apollo and contamination control. Grumman Aircraft's role

Apollo and contamination control. McDonnell Douglas' role

Apollo and contamination control. NASA's role

Apollo and contamination control. Rocketdyne's role

(Apollo)/Approach to computerized bacterial identification

(Apollo)/Defining Mars' atmosphere - a goal for the early mission

Apollo lunar module engine exhaust products

(Apollo)/Model for the quantification of the qualitative microfa

Apollo modules/Determination of quantitative microbial sampling

(Apollo)/Planetary quarantine program

Apollo program/Handbook for contamination control on the

(Apollo)/Search for viable organisms in a lunar sample

(Apollo)/Computerized bacterial identification system

(Apollo)/User's manual for the planetary quarantine lunar informa

Apollo 6 spacecraft during final assembly and testing/Microbial

Apollo 9 spacecraft/Microbial contamination detected on the

Apollo 10 and 11 spacecraft/Quantitative and qualitative microbiote

aseptic maintenance by pressurization/A study of

aseptic maintenance by pressurization/A study of

aseptic maintenance by pressurization/A study of

aspects of spacecraft sterilization/Biological and engineering

(assay)/Effect of dimethyl sulfoxide on the sporicidal activity of

(assay)/Methyl bromide as an aid to ethylene oxide sterilization

assay of space hardware/Microbiological
Paraformaldehyde for surface sterilization and detoxification

Planetary quarantine supporting activities

Procedures for the microbiological examination of spacecraft

Quality assurance monitoring of the microbiological aspects

Reduction of microbial dissemination germicidal activity

Relative frequency distribution of $D_{125^\circ C}$ for values for $s$

Study of aseptic maintenance by pressurization

Vacuum probe: new approach to the microbiological sampling

Assay by the USA standard procedure/The effect of low numbers

Assaying buried biological contamination/An analytical basis for assembly and development laboratory routine cleaning and decontamination

Assembly and sterilization of spaceflight hardware/Engineering assembly

Apollo and contamination control. McDonnell Douglas' role

Assembly areas needed for spacecraft sterilization/Microbial contamination

Class 100 clean room program. Pilot shop operations

Clean room in space technology

Assembly/Compatibility of sterilization and contamination control

Assembly/Contamination and sterilization

Assembly/Contamination control

Assembly contamination model/Assembly development laboratories EASL and SADL/The microbiological assembly

Development of mechanical sterile insertion equipment/EASL/SADL test and operation. Phase II: summary

Effect of airflow velocity on biocontamination in laminar flow assembly

Effect of current cleaning procedures on sterilization assembly

Evaluation of microbiological filters for liquids and assembly, Explorer XXXV spacecraft/Clean room facilities for assembly facility operations/Microbiological monitoring of spacecraft facility operations/Microbiological monitoring of spacecraft assembly in the sterilization assembly development laboratory/Biocompatible method of particulate contamination

Assembly of CMTM for purposes of determining areas of contact during assembly of sterilizable planetary landing capsules/Progressive biological monitoring on lunar orbiters

Recommendations for determination of spacecraft sterilization/Research study to definitize a bio-isolation suit system

Space hardware assay methodology

Spacecraft preparation and sterilization as state of the art

Status review of technology developments for spacecraft assembly/sterilizer facility feasibility program final report

Assembly/sterilizer facility feasibility program final report

Assembly/sterilizer - Facility for the sterilization and assembly techniques/Experimental study of sterilization techniques/Experimental study of sterilization assembly techniques/Experimental study of sterilization (assembly) Technology feasibility spacecraft. Sterilization and b
Terminal sterilization process calculation for spacecraft
Testing and fabrication of plastic vacuum probe surface
Valve bioload reduction and sterilization study
atmosphere and beyond/Microbes in the upper
Apollo lunar module engine exhaust products
Approach to contamination identification
ATP assay of terrestrial soils - a test of an exobiotic
Comparative evaluation of methods for the search for
Designing for the laminar flow environment
Development of two closely controlled humidity systems
Effect of a simulated Martian environment on certain
cell moisture on the thermal inactivation
Ethylene oxide sterilization, a current review of practice
Exospheric temperatures on Mars and Venus
Experimental heat chamber for sterilization of large
Experimental heat chamber for sterilization of large
atmosphere/Feasibility study of an experiment for determining the
atmosphere flown on Aerobee NASA 4.150/Experiment to detect microorganisms
atmosphere - Goal for the early missions/Defining Mars'
Instrument for study of microbial thermal inactivation
Investigations into a diffusion model of dry heat sterilization
Martian scene
Microbiological methods of testing the
1973 Viking voyage to Mars
atmosphere of Jupiter/The upper
atmosphere on polymeric materials/Effects of simulated Venus
atmosphere/Simulation of the Venus
Spacecraft component survivability during entry into the
Spacecraft sterilization by destructive heating
Spacecraft sterilization - the grand requirements
Study of aseptic maintenance by pressurization
atmospheres of different water contents/Heat resistance of Bacillus
atmospheres of Mars and Venus/The
atmospheric entry/Study of the thermal kill of viable organisms
atmospheric pressure/Resistivity of spores to ultraviolet and gamma
Automatic biodetecting and monitoring instruments open new doors
Instrument for study of microbial thermal inactivation
Automation/AEC/NASA symposium on contamination control; current
(Aw) Bacteria under simulated Martian conditions
(Aw) Biophysical analysis of the spore
(Aw) Dry heat destruction of B. subtilis var. niger in a closed system
(Aw) Environmental microbiology as related to planetary quarantine
(Aw) Environmental microbiology as related to planetary quarantine
Estimation of microbial survival in heat sterilization
Martian surface simulation facility for bacterial studies
Microbiological aspects of ethylene oxide sterilization. Effect on the sporicidal activity of ethylene oxide/Effects of
on the sporicidal activity of ethylene oxide/Effects of
Planetary quarantine program
Sterilising properties of ethylene oxide
Sterilization of space hardware
Survival of microbial spores under several temperature and h
value investigations/Status report on D, z, and

Bacillus subtilis and Staphylococcus epidermidis population/Comp
B. subtilis spores/Gamma irradiation of
Bacillus subtilis/Sporulation mutations induced by heat in
(Bacillus subtilis var. niger)Comparison of microbial contaminat
(Bacillus subtilis var. niger)Ecology and thermal inactivation o
(Bacillus subtilis var. niger)Ecology and thermal inactivation o
(Bacillus subtilis var. niger)Ecology and thermal inactivation o
(Bacillus subtilis var. niger)Ecology and thermal inactivation o
(Bacillus subtilis var. niger)Ecology and thermal inactivation o
(Bacillus subtilis var. niger)Ecology and thermal inactivation o
(Bacillus subtilis var. niger)Ecology and thermal inactivation o
(Bacillus subtilis var. niger)Effect of temperature and gas velo
(Bacillus subtilis var. niger)Environmental microbiology as rela
(Bacillus subtilis var. niger)Environmental microbiology as rela
(Bacillus subtilis var. niger)Evaluation of a NASA biological is
B. subtilis var. niger in a closed system/Dry heat destruction r
B. subtilis var. niger in a closed system: Measurement of water
B. subtilis var. niger in a closed system: Thermal destruction s
Bacillus subtilis var. niger in association with soil mineral pa
Bacillus subtilis var. niger/Influence of spore moisture conten
Bacillus subtilis var. niger/Method for obtaining free bacterial
Bacillus subtilis var. niger on Kapton and Teflon film at high t
(Bacillus subtilis var. niger)Services provided in support of th
(Bacillus subtilis var. niger)Services provided in support of th
Bacillus subtilis var. niger spores included within water-solubl
B. subtilis var. niger spores occluded in water-insoluble crysta
B. subtilis var. niger spores on mated surfaces/Dry heat resist
Bacillus subtilis var. niger spores with gaseous ethylene oxide
(Bacillus subtilis var. niger)Sporicidal activity of sodium hypo
(Bacillus subtilis var. niger)Sporicidal effect of peracetic aci
(Bacillus subtilis var. niger)Survival of microorganisms in spac
Back contamination
bacteria and bacteria spores/Observations regarding the steriliz
bacteria and viruses in liquids/Detection of
(bacteria)Combined effects of ultrahigh vacuum and temperature o
(bacteria)Comparison of methyl-bromide and ethylene oxide resist
(bacteria)Dry heat survival of Bacillus subtilis var. niger in a
bacteria/Effect of diurnal freeze-thawing on survival and growth
(bacteria)Ethylene oxide sterilization, a current review of prin
bacteria exposed to various temperatures and to three years of c
bacteria from eecofom FP and diatomaceous earth/Recovery of veg
(bacteria)Germicidal activity of ethylene oxide
(bacteria)Heat injury of Bacillus subtilis spores at ultrahigh t
bacteria in agar subjected to freezing, diurnal freezing and tha
bacteriological detection techniques to low levels of contaminat
bacteriology of "clean rooms"/The 442
bacteriology of clean rooms/The 768
(barrier)Design feasibility of sterile insertion techniques 39
barrier equipment and techniques/Microbiological 909
barrier techniques/Microbiological 910
barrier techniques/Microbiological 911
(barrers)Techniques for sterile insertion and repair of spacecr 1188
Beta-propiolactone/Disinfection of aerosol chambers with 7
Beta-propiolactone/Disinfection of microbial aerosol chambers wi 8
Beta-propiolactone/Sterilization of instruments and materials wi 10
(Beta-propiolactone)Sterilization of space hardware 892
Beta-propiolactone vapor as a disinfectant 550
Beta-propiolactone vapor decontamination 551
Beta-propiolactone vapor/Decontamination of enclosed spaces with 135
Beta-propiolactone vapor/Effect of bacterial cell moisture on th 546
Beta-propiolactone vapor. Effect on the etiological agents of sm 254
Beta-propiolactone vapor/Method for disinfecting large enclosure 1137
(bibliographies)Planetary quarantine: principles, methods and pr 486
Bibliography from the Literature Retrieval System, Space Biology 422
Bibliography of lunar and planetary research, 1960-1964 1032
Bibliography on applications of ethylene oxide 1291
Bibliography on inactivation of viruses and rickettsiae by heat 1260
Bibliography on planetary quarantine. Vol. I. Policy 1292
Bibliography on planetary quarantine. Vol. II. Environmental mic 1293
Bibliography on planetary quarantine. Vol. III. Engineering para 1294
(bibliography)Planetary Quarantine. Volume V. 1967 supplement 1261
(bibliography)Sterilization handbook 302
(bibliography)Surveyor sterilization. Literature review of the p 1285
bibliography/Use of ethylene oxide: a partially annotated 921
(bioassay)Assembly of CMTM for purposes of determining areas of 130
(bioassay)Assembly/sterilizer facility feasibility program final 1308
(bioassay)Assembly/sterilizer facility feasibility program final 1309
(bioassay)Basic studies in environmental microbiology as related 1235
(bioassay)Biological evaluation of the biodetection grinder 1090
(bioassay)Class 100 clean room program, preparation and initial 731
(bioassay)Clean room facilities for Explorer 35 spacecraft 673
(bioassay)Contamination control and sterilization in space progr 823
(bioassay)Continuation of the development of a typical Mars land 48
(bioassay)Development of a laminar airflow biological cabinet 1
(bioassay)Effect of a simulated Martian environment on certain e 69
(bioassay)Environmental microbiology as related to planetary qua 86
(bioassay)Estimation of the parameters in exponential decontamin 222
(bioassay)Evaluation of new penetrating sporicide potentially us 4
(bioassay)Life in the clouds 35
(bioassay)Microbiological sampling of surfaces 380
(bioassay)Microbiology quality activities for a planetary missio 195
(bioassay)Natural selection of microorganisms in extreme environ 5
bioassay of spacecraft/Development of new and improved technique 1304
(bioassay)Possible contamination of earth by lunar or Martian li 6
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioassay Quality assurance requirements manual for planetary space</td>
<td>755</td>
</tr>
<tr>
<td>Bioassay Spacecraft sterilization</td>
<td>45</td>
</tr>
<tr>
<td>Bioassay Sterilizable liquid propulsion system, Part 2 final report</td>
<td>705</td>
</tr>
<tr>
<td>Bioassay Technology feasibility spacecraft. Sterilization and bio</td>
<td>735</td>
</tr>
<tr>
<td>Bioassay Types of biological indicators used in monitoring steril</td>
<td>781</td>
</tr>
<tr>
<td>Biobarrier Assembly/sterilizer - facility for the sterilization</td>
<td>240</td>
</tr>
<tr>
<td>Biobarrier Basic studies in environmental microbiology as related to</td>
<td>782</td>
</tr>
<tr>
<td>Biobarrier Biological contamination control</td>
<td>905</td>
</tr>
<tr>
<td>Biobarrier Development of a typical Mars landing capsule sterilization</td>
<td>753</td>
</tr>
<tr>
<td>Bioburden Analytical basis for planetary quarantine</td>
<td>1181</td>
</tr>
<tr>
<td>Bioburden Assembly contamination model</td>
<td>1075</td>
</tr>
<tr>
<td>Bioburden Biological decontamination of a spacecraft system</td>
<td>1092</td>
</tr>
<tr>
<td>Bioburden Biostatistics and space exploration: microbiology and</td>
<td>671</td>
</tr>
<tr>
<td>Bioburden Changes of retrieval of viable microorganisms deposit</td>
<td>1178</td>
</tr>
<tr>
<td>Bioburden Class 100 clean room program</td>
<td>732</td>
</tr>
<tr>
<td>Bioburden Class 100 clean room program</td>
<td>733</td>
</tr>
<tr>
<td>Bioburden Class 100 clean room program</td>
<td>734</td>
</tr>
<tr>
<td>Bioburden Clean room complex for microbial contamination control</td>
<td>237</td>
</tr>
<tr>
<td>Bioburden Comparative studies of conceptual design and quality</td>
<td>664</td>
</tr>
<tr>
<td>Bioburden Comparative studies of conceptual design and quality</td>
<td>665</td>
</tr>
<tr>
<td>Bioburden Contamination and sterilization</td>
<td>479</td>
</tr>
<tr>
<td>Bioburden Decontamination of AIMP-D spacecraft</td>
<td>675</td>
</tr>
<tr>
<td>Bioburden Ecology and thermal inactivation of microbes in and outside</td>
<td>174</td>
</tr>
<tr>
<td>Bioburden Effect of current cleaning procedures on sterilization</td>
<td>754</td>
</tr>
<tr>
<td>Bioburden Effect of microbial release probabilities on spacecraft</td>
<td>1076</td>
</tr>
<tr>
<td>Bioburden Estimation and prediction. A preliminary report/A statistical model of the vacuum probe</td>
<td>1004</td>
</tr>
<tr>
<td>Bioburden Estimation of particulate loads on components of device</td>
<td>273</td>
</tr>
<tr>
<td>Bioburden Improved model of the AIMP-D spacecraft</td>
<td>796</td>
</tr>
<tr>
<td>Bioburden Mariner Mars 1971 planetary quarantine plan</td>
<td>540</td>
</tr>
<tr>
<td>Bioburden Mariner Mars 1971 post-launch analysis of compliance</td>
<td>541</td>
</tr>
<tr>
<td>Bioburden Mathematical models for contamination and pollution control</td>
<td>825</td>
</tr>
<tr>
<td>Bioburden Microbiological monitoring of spacecraft assembly facilities</td>
<td>190</td>
</tr>
<tr>
<td>Bioburden National Aeronautics and Space Administration position</td>
<td>483</td>
</tr>
<tr>
<td>Bioburden New approaches to contaminant control in spacecraft</td>
<td>42</td>
</tr>
<tr>
<td>Bioburden Objectives and technology of spacecraft sterilization</td>
<td>485</td>
</tr>
<tr>
<td>Bioburden Objectives and technology of spacecraft sterilization</td>
<td>493</td>
</tr>
<tr>
<td>Bioburden Operations problem of sterilization</td>
<td>588</td>
</tr>
<tr>
<td>Bioburden Planetary quarantine, SPT (OSSA Program)</td>
<td>605</td>
</tr>
<tr>
<td>Bioburden Planetary quarantine supporting activities</td>
<td>435</td>
</tr>
<tr>
<td>Bioburden Planning, evaluation and analytical studies to implement</td>
<td>51</td>
</tr>
<tr>
<td>Bioburden Planning, evaluation and analytical studies to implement</td>
<td>52</td>
</tr>
<tr>
<td>Bioburden Planning, evaluation and analytical studies to implement</td>
<td>53</td>
</tr>
<tr>
<td>Bioburden Post launch recontamination studies</td>
<td>744</td>
</tr>
<tr>
<td>Bioburden Proceedings of the meeting on problems and techniques</td>
<td>812</td>
</tr>
<tr>
<td>Bioburden Recommendations for determination of spacecraft sterilization</td>
<td>1145</td>
</tr>
<tr>
<td>Bioburden Reduction of microbiological shedding in clean rooms</td>
<td>1123</td>
</tr>
<tr>
<td>Bioburden Re-evaluation of planetary quarantine constraints</td>
<td>323</td>
</tr>
<tr>
<td>Bioburden Spacecraft cleaning and decontamination techniques</td>
<td>1086</td>
</tr>
<tr>
<td>Bioburden Spacecraft monitoring method and procedures</td>
<td>1170</td>
</tr>
</tbody>
</table>
biological cabinet/Microbiological studies on the performance of
Biological-chemical indicator for ethylene oxide sterilization
Biological contamination control
biological contamination control: Policy and responsibility/Outb
biological contamination control: Policy and responsibility/Outb
Biological contamination of Mars. Cold and aridity as constraint
biological contamination of Mars/Probability of
Biological contamination of Mars. Survival of terrestrial microo
Biological contamination of the Moon
biological contamination/Sterilization of space vehicles to prev
Biological decontamination of a spacecraft system
biological handbook for engineers/Procedure manual for planetary
biological indicator for dry heat sterilization/Development of a
biological isolation garment after chemical impregnation/Evaluat
biological laboratory, project definition/Study of the automated
biological loading of spacecraft before sterilization/Techniques
Biological losses and the quarantine policy for Mars
Biological monitoring of the capsule mechanical training model d
biological monitoring on lunar orbiters/Progressive
biology of Mars/Surface environment and possible
(biometry)Biostatistics and space exploration: Microbiology and
(biometry)Biostatistics and space exploration: Microbiology and
(biometry)Certain uncorrelated nonparametric test statistics
(biometry)Technology feasibility spacecraft. Sterilization and
Biostatistics and space exploration: Microbiology and sterilizat
Biostatistics and space exploration: Microbiology and sterilizat
Biostatistics and space exploration: Microbiology and sterilizat
Biostatistics and space exploration: Microbiology and sterilizat
(BISS)Design and development of a bio-isolator suit system
(BISS)Model Assembly Sterilizer for Testing(MAST)
burden predictions/Study program on the development of a mathema
burden predictions/Study program on the development of a mathema
burden predictions/Study program on the development of a mathema
burden predictions. User's manual for the microbial burden predi
(buried contamination)AEC/NASA symposium on contamination contro
(buried contamination)Analysis of microbial release probabilitie
buried contamination/Analytical basis for assaying
(buried contamination)Basic studies in environmental microbiolog
(buried contamination)Biodetection grinder
(buried contamination)Biostatistics and space exploration: micro
buried contamination by aeolian erosion/Release of
(buried contamination)Conference on hazard of planetary contamin
(buried contamination)Dry heat destruction of B. subtilis var. n
(buried contamination)Dry heat destruction rates for microorganis
(buried contamination)Ecology and thermal inactivation of microb
(buried contamination)Ecology and thermal inactivation of microb
(buried contamination)Ecology and thermal inactivation of microb
(buried contamination)Effect of relative humidity on the penetra
(buried contamination)Effects of aeolian erosion on microbial re
(buried contamination)Ethylene oxide resistance of nondesiccated

112
Evaluation of a quantal response model with buried contamination
Evaluation of new penetrating sporicide potential
Investigation of methods for the sterilization of microbial contaminants in the interiors of microorganisms, alive and imprisoned in a solid material
Multiplication of certain soil microorganisms
Natural space environmental studies
Objectives and technology of spacecraft sterilization
Potential effects of recent findings on spacecraft sterilization
Release of microorganisms from solid materials after support of the planet
Release of microorganisms from solid materials provided in support of the planet
Services provided in support of the planet
Services provided in support of the planet
Spacecraft sterilization
Study of dry heat sterilization of microorganisms
Survey of electronic components
Survival and release of viable microorganisms

Apollo lunar module engine exhaust products
Exospheric temperatures on Mars and Venus
carbon dioxide mixtures on bacteria and bacteria spores/Observation
Heat sterilization of activated cells
Apollo lunar module engine exhaust products
Spacecraft sterilization - the grand requirement
Cell moisture on the sporicidal activity of Beta-propiolactone
Cell moisture on the thermal inactivation rate of bacterial spores
Cell recovery from solid materials/Microbial cells/Effect of heat treatment on the growth of surviving cells
Sterilization of lunar and planetary space vehicles
Ethylene oxide - Freon 12 decontamination procedure: chemical and physical factors/Sterilization with gaseous ethylene
An investigation of a sono-chemical approach in sterilization
An investigation of a sono-chemical approach in sterilizing
Apollo lunar module engine exhaust products
Application of bench tests in the development of heat chemical approaches/Detection of low levels of microbial contamination
Chemical approaches/Detection of low levels of microbial contamination
Contaminant inventory for lunar missions/Implementation

113
Disinfection of microbial aerosol chambers with \textit{Beta-p} 7,8
Effect of various gas atmospheres on destruction of mi 897
Effects of simulated Venus atmosphere on polymeric mat 618
Environmental microbiology as related to planetary qua 86
Environmental microbiology as related to planetary qua 87
Heat sterilizable battery development 708
Heat sterilizable battery development 711
chemical impregnation/Evaluation of a NASA biological isolation 452
Investigation of methods for the sterilization of pott 1199
Investigations on sterilizable battery separators 243
Kinetics of disinfection 966
1973 Viking voyage to Mars 1248
Observations regarding the sterilizing effect of ethyl 151
Pracetic acid aerosols 444
Practical procedures for microbial decontamination 916
Properties and essential information for safe handling 745
chemical resistance of \textit{Bacillus subtilis} var. \textit{niger} spores inclu 798
Resistance of \textit{B. subtilis} var. \textit{niger} spores occluded i 286
Review of the possible existence of a Jovian atmospher 1130
Sterilization 281
Use of ethylene oxide: a partially annotated bibliogra 921
Virucidal properties of dimethyl sulfoxide 184
Modern methods and means of sterilization of spacecraft 1228
Class 100 clean room program, preparation and initial operations 731
class 100 laminar-flow clean room for viable contamination clean 64
(class 100)Monitoring of laminar downflow clean rooms 1269
clean areas/Monitoring 725
Clean assembly and sterilization laboratory 206
clean assembly and sterilization of spaceflight hardware/Enginee 237
cleanliness at JPL's EASL and SADL/Microbial 867
(cleanliness)on the destruction of \textit{Bacillus subtilis} var. \textit{niger} 283
Clean room and work station requirements, controlled environment 1221
(clean room)Apollo and contamination control. Boeing's role 196
(clean room)Apollo and contamination control. McDonnell Douglas' 668
(clean room)Apollo and contamination control. Rocketdyne's role 181
(clean room)Basic studies in environmental microbiology as relat 782
(clean room)Biological and engineering aspects of spacecraft ste 701
(clean room)Checklist of good contamination control practices fr 57
(clean room)Clean assembly and sterilization laboratory 206
(clean room)Comparative studies of conceptual design and qualifi 999
clean room complex for microbial contamination control/A 237
(clean room)Contamination control in the manufacturing sequence 1282
(clean room)Contamination control. State-of-the-art review 1272
(clean room)Deposition of nutrients to surfaces by Rodac plates 63
(clean room)Development and test of flexible film coupon strips 3
clean room during an eleven week test period/The level of microb 941
clean room/Evaluation of clean-up efficiency for viable contamin 64
(clean room)Effect of environment on biological burden during sp 1164
(clean room)facilities for Explorer 35 spacecraft 673
clean room for viable contamination cleanup/Evaluation of the ef
(clean room)Handbook of biological aspects of spacecraft steril 64
(clean room)HEPA:LAF environmental control at Riker laboratories 655
(clean room)Improved model of the vacuum probe 415
(clean room)Industrial applications of laminar airflow 796
clean room in space technology/The 348
(clean room)JPL spacecraft sterilization technology program: A s 793
(clean room)Mathematical models for contamination and pollution 290
(clean room)Microbiologic filters - liquid and gas 825
(clean room)Microbiological aspects of sterilization assembly de 601
(clean room)Microbiological studies conducted in a vertical lami 868
(clean room)Microbiology of surgery suites 722
(clean room)Monitoring a Class 100 1208
(clean room)Monitoring for planetary quarantine program/System 1268
(clean room)Monitoring for planetary quarantine program/System 1044
(clean room)Monitoring for planetary quarantine program/System 1045
(clean room)Monitoring of sterile areas 1046
(clean room)Monitoring of sterile areas 725
Clean room personnel 43
(clean room)Planetary quarantine program./Systems analysis and c 1036
(clean room)Planetary quarantine program./Systems analysis and c 1042
(clean room)Planetary quarantine program./Systems analysis and c 1049
(clean room)Planetary quarantine progress 824
clean room program. Pilot shop operations/Class 100 732
clean room program. Pilot shop operations/Class 100 733
clean room program. Pilot shop operations/Class 100 734
clean room program, preparation and initial operations/Class 100 731
clean room)Progressive biological monitoring on lunar orbiters 849
(clean room)Quality assurance monitoring of the microbiological 413
(clean room)Services provided in support of the planetary quaran 366
(clean room)Services provided in support of the planetary quaran 1218
(clean room)Services provided in support of the planetary quaran 1219
(clean room)Sterilization facility concepts 610
(clean room)Sterilization. Selected bibliography from the litera 423
(clean room)Study of the application of laminar flow ventilation 392
(clean room)Techniques for the limitation of biological loading 730
Clean room technology 1222
(clean room)Traditional concepts for contamination control 914
(clean room)Ultracean technology 491
(clean room)Use of laminar flow for environmental control 1271
(clean room)Vacuum probe: new approach to the microbiological sa 1280
clean room when occupied by operating personnel/Microbial contam 942
clean rooms and devices/Design requirements for laminar airflow 694
clean rooms and work stations for the microbi ally controlled env 814
"clean rooms"/Bacteriology of 768
clean rooms/Bacteriology of 776
clean rooms. Classified list of selected references, 1955-1964/D 395
clean rooms/Comparative levels and types of microbial contaminat 375
clean rooms/Comparative levels of microbial contamination among 749
clean rooms/Comparison of microbial contamination levels among h 377
clean rooms/Estimation of particulate loads on components of dev 273

115
clean rooms in medical and life science research/Present day usa 409

clean rooms/Investigation of a new ventilating system for 9

clean rooms/Microbial contamination in 953

clean rooms/Microbial contamination in conventional and laminar 379

clean rooms/Microbial profile of laminar flow 959

clean rooms/Monitoring of laminar downflow 1269

(clean rooms)Principles and applications of laminar-flow devices 727

clean rooms/Reduction of microbiological shedding in 1123

clean rooms used for the assembly and test of lunar spacecraft/C 1189

clean-up efficiency for viable contamination by a Class 100 lami 64

(closed ecology)Microbiological barrier techniques 911

clostridia/Low temperature growth characteristics of 1014

(Clostridium perfringens). Heat resistance and toxigenicity/Some p 1264

(Clostridium perfringens)Reduction of microbial dissemination an 818

Clostridium welchii/Heat and radiation resistance and activation 1013

Comparative levels and types of microbial contamination detected 375

Comparative levels of microbial contamination among hospital ope 749

Comparison of microbial contamination levels among hospital oper 377

comparison of two model-discrimination criteria 763

compartmental models/Simultaneous estimation by partial totals f 65

component sterilization-reliability effects/An integrated test p 156

(component)Application of bench tests in the development of hea 1249

(components assembly)Clean room facilities for Explorer 35 space 673

(components assembly)Use of laminar flow for environmental contr 1271

(components)Biological decontamination of a spacecraft system 671

(components)Checklist of good contamination control practices fr 57

(components)Clean assembly and sterilization laboratory 206

(components)Clean room complex for microbial contamination contr 237

(components)Clean room technology 1222

(components)Designing for the laminar flow environment 1273

(components)Development and application of a system model for sp 319

(components)Dry heat destruction of spores in simulated space veh 31

(components)Dry heat destruction rates for microorganisms on ope 884

(components)Ecology and thermal inactivation of microbes in and o 13

(components)Ecology and thermal inactivation of microbes in and o 14

(components)Ecology and thermal inactivation of microbes in and o 15

(components)Ecology and thermal inactivation of microbes in and o 16

(components)Ecology and thermal inactivation of microbes in and o 17

(components)Ecology and thermal inactivation of microbes in and o 18

(components)Ecology and thermal inactivation of microbes in and o 19

(components)Ecology and thermal inactivation of microbes in and o 20

(components)Ecology and thermal inactivation of microbes in and o 21

(components)Ecology and thermal inactivation of microbes in and o 22

(components)Ecology and thermal inactivation of microbes in and o 23

(components)Ecology and thermal inactivation of microbes in and o 24

(components)Ecology and thermal inactivation of microbes in and o 25

(components)Ecology and thermal inactivation of microbes in and o 174

(components)Ecology and thermal inactivation of microbes in and o 175

116
components/Ecology and thermal inactivation of microbes in and o
components/Ecology and thermal inactivation of microbes in and o
components/Ecology and thermal inactivation of microbes in and o
components/Ecology and thermal inactivation of microbes in and o
(components)Effects of decontamination sterilization, and therma
(components)Effect of environment on biological burden during sp
(components)Evaluation of new penetrating sporicide potentially
(components)Experimental heat chamber for sterilization of large
(components)Experimental heat chamber for sterilization of large
(components)Experimental heat chamber for sterilization of large
(components)Experimental heat chamber for sterilization of large
(components)Experimental heat chamber for sterilization of large
(components)Investigation of methods for the sterilization of po
(components)Investigation of methods for the sterilization of po
(components)Investigation of the feasibility of sterile assembly
(components)Laboratory for monitoring bacterial contamination of
(components)Matrix test of sterilizable piece parts
(components)Microbial contamination control after terminal steri
(components)components of devices manufactured in clean rooms/Estimation of
(components)components of spacecraft/Sterilization of electronic
(components)Progressive biological monitoring on lunar orbiters
(components)Quality assurance requirements manual for planetary
(components)Spacecraft sterilization: Some specific examples
(components)Spacecraft sterilization - the grand requirements
(components)Sterile access studies in the pilot assembly sterili
(components)Sterilizable electronic packaging, connectors, wires
(components)Sterilizable inertial sensors: high-performance acce
(components)Sterilizable liquid propulsion system
(components)Sterilization-environmental testing of initiators
(components)Surveyor sterilization. A literature review of the ph
(components)components with ethylene oxide - Freon 12 and heat/Surveyor ster
(computer)User's manual for planetary quarantine for lunar p
(configuration)Experimental heat chamber for sterilization of la
(constituents)constituents inventory program/Planning study for an organic
(constRAINTS)Analysis of microbial release probabilities
(constRAINTS)Development of a typical Mars landing capsule steri
(constRAINTS)EASL/SADL test and operations. Summary.
(constRAINTS)Estimation of planetary contamination probabilities
(constRAINTS)Flight path and mission strategies to satisfy outer
(constRAINTS)constraints. Introduction to the problems of planetary quarantin
(constRAINTS)Mariner Mars 1971 planetary quarantine plan
(constRAINTS)Mariner Venus 67 - prelaunch analysis of contaminat
(constRAINTS)New concepts on sterilization. Alternatives to redu
(constRAINTS)Planetary contamination. Soviet and U.S. practices
(constRAINTS)Planetary microbiological contamination
(constRAINTS)Planetary quarantine consideration for outer planet

117
Planetary quarantine plan, Voyager project

Preliminary quarantine analysis of a possible Marin

Sterilization assembly and development laboratory

Sterilization techniques

contaminant control in spacecraft/New approaches to

contaminants/Basic studies in environmental microbiology as rela

contaminants in the interiors of spacecraft components/Microbial

(contaminants)Microbiological barrier techniques

contaminants on space hardware/Factors influencing detection and

contaminants/Special problem of encapsulated

contaminants throughout the test cycle/Degradation due to

contaminated by handling and by aerial fallout during a 2 1/2 ye

contaminated Mars?/Panspermia revisited, or have we already

contaminated stainless steel by laminar airflow/Microorganisms r

contaminating Mars/Nomenclature of symbols relevant to the proba

(contamination)Adaptive allocation of planetary quarantine viola

to contamination among hospital operating rooms and industrial clea

Contamination analysis and monitoring

(contamination)Analytical method for calculating heat sterilizat

(contamination)Analytical techniques in planetary quarantine

contamination and pollution prediction/Mathematical models for

Contamination and sterilization

(contamination)Assembly of CMTM for purposes of determining area

contamination associated with the Apollo 6 spacecraft during fin

(contamination)Bacteriology of clean rooms

(contamination)Biological and engineering aspects of spacecraft

(contamination)Biological losses and the quarantine policy for M

(contamination)Biostatistics and space exploration: Microbiology

contamination by a Class 100 laminar flow clean room/An evaluati

contamination by aeolian erosion/Release of buried

contamination by space probes/Probability of planetary

contamination by terrestrial microorganisms/Analytical basis for

(contamination)Capsule sterilization canister separation joint

(contamination)Clean room and work station requirements, control

(contamination)Clean room facilities for assembly, Explorer XXXV

contamination cleanup/Evaluation of the efficiency of a Class 10

(contamination)Consideration for the Martians

(contamination)Contributions of microbiological safety to space

Contamination control

Contamination control

contamination control after terminal sterilization/Microbial

Contamination control and sterilization in space programs

Contamination control: a very old, new field

(contamination control)Avionics clean room

contamination control/Biological

contamination control. Boeing's role/Apollo and

contamination control/Clean room complex for microbial

(contamination control)Clean room facilities for Explorer 35 spa

(contamination control)Clean room technology
contamination control; current and advanced concepts in instrume
(Contamination control) Designing for the laminar flow environmen
(Contamination control) 5 year forecast for
Contamination control for Tital IIIB program/Some new concepts i
Contamination control. Grumman Aircraft's role/Apollo and
Contamination control handbook
Contamination control handbook for ground fluid systems
Contamination control in spacecraft sterilization/Microbiologica
Contamination control in the manufacturing sequence
Contamination control. McDonnell Douglas' role/Apollo and
Contamination control/Microbiological
Contamination control. NASA's role/Apollo and
Contamination control: Needs and areas of application/Laminar ai
Contamination/Control of microbial
(Contamination) Control of microbiological hazards in the laborat
Contamination control on the Apollo program/Handbook for
Contamination control/Outbound spacecraft: Basic policy relating
(Contamination control) Planetary quarantine and space vehicle st
Contamination control: Policy and responsibility/Outbound lunar
Contamination control: Policy and responsibility/Outbound planet
Contamination control practices from a manufacturing viewpoint/C
Contamination control principles
Contamination control. Rocketdyne's role/Apollo and
(Contamination control) State-of-the-art review
(Contamination control) Sterile access studies in the Pilot Assem
(Contamination control) Sterilization and decontamination techniq
Contamination control/Systems approach to
(Contamination control) Technology/immediate and future challenge
Contamination control/Traditional concepts for
Contamination control with application to spacecraft assembly/Co
(Contamination) Design requirements for laminar airflow clean ro
Contamination detected in industrial clean rooms/Comparative lev
(Contamination) Determination of quantitative microbial sampling
(Contamination) Develop and test of a sterile insertion repair te
(Contamination) Development and test of flexible film coupon stri
(Contamination) Development of a laminar airflow biological cabin
Contamination/Die-off of microbial
(Contamination) Discussion of the planetary quarantine constraint
(Contamination) Dry heat inactivation kinetics of naturally occur
(Contamination) Ecology and thermal inactivation of microbes in a
(Contamination) Effectiveness of laminar airflow for controlling
Contamination/Environmental microbiology and the control of micr
(Contamination) Environmental microbiology as related to planetar
(Contamination) Environmental microbiology as related to planetar
(Contamination) Environmental microbiology as related to planetar
(Contamination) Estimation of planetary contamination probabiliti
(Contamination) Evaluation of alcohol sporulation method
(Contamination) Evaluation of alcohol sporulation method
(Contamination) Experiment to determine the effects of solid and
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exponential decontamination models for count data</td>
<td>229</td>
</tr>
<tr>
<td>Contamination failure models for determining the probability</td>
<td>1185</td>
</tr>
<tr>
<td>Contamination from fractured solids/Release of microbial</td>
<td>880</td>
</tr>
<tr>
<td>Contamination from Gemini space suit/Evaluation of leakage of microbe</td>
<td>817</td>
</tr>
<tr>
<td>Contamination/Gaseous sterilization</td>
<td>138</td>
</tr>
<tr>
<td>Contamination handbooks of biological aspects of spacecraft steriliza</td>
<td>655</td>
</tr>
<tr>
<td>(contamination) Handbook of biological aspects of spacecraft steriliz</td>
<td>645</td>
</tr>
<tr>
<td>Contamination in a clean room during an eleven week test period</td>
<td>941</td>
</tr>
<tr>
<td>Contamination in a clean room when occupied by operating personnel</td>
<td>942</td>
</tr>
<tr>
<td>Contamination in clean rooms/Microbial</td>
<td>953</td>
</tr>
<tr>
<td>Contamination in clean rooms used for the assembly and test of</td>
<td>1189</td>
</tr>
<tr>
<td>Contamination in conventional and laminar flow clean rooms/Microbial</td>
<td>379</td>
</tr>
<tr>
<td>Contamination in industrial applications of laminar airflow</td>
<td>348</td>
</tr>
<tr>
<td>Contamination inside balsa wood and explosive charges (squibs, p</td>
<td>938</td>
</tr>
<tr>
<td>Contamination inside cured solid propellant/Investigation of</td>
<td>939</td>
</tr>
<tr>
<td>Contamination inside electronic components/Technique for the inv</td>
<td>610</td>
</tr>
<tr>
<td>Contamination inside electronic components/Investigation of</td>
<td>934</td>
</tr>
<tr>
<td>Contamination inside electronic components/Investigation of</td>
<td>935</td>
</tr>
<tr>
<td>Contamination inside electronic components/Investigation of</td>
<td>936</td>
</tr>
<tr>
<td>Contamination inside irritated and heated electronic components</td>
<td>940</td>
</tr>
<tr>
<td>Contamination inside solar panel/Investigation of bacterial</td>
<td>937</td>
</tr>
<tr>
<td>Contamination in space hardware/Methodology of measuring interna</td>
<td>441</td>
</tr>
<tr>
<td>Contamination/Instrumentation and methodology in measurement of</td>
<td>1277</td>
</tr>
<tr>
<td>Contamination in the interior of spacecraft components/Conference</td>
<td>1133</td>
</tr>
<tr>
<td>(contamination) Investigation of the reliability of sterile inser</td>
<td>1152</td>
</tr>
<tr>
<td>(contamination isolates) Services provided in support of the plan</td>
<td>357</td>
</tr>
<tr>
<td>(contamination) Laboratory evaluation of the plastic vacuum probe</td>
<td>343</td>
</tr>
<tr>
<td>(contamination) Laminar flow for the neurosurgical operating room</td>
<td>56</td>
</tr>
<tr>
<td>Contamination levels among hospital operating rooms and the indu</td>
<td>377</td>
</tr>
<tr>
<td>Contamination levels in a laminar flow operating room</td>
<td>393</td>
</tr>
<tr>
<td>Contamination located between mated surfaces and on exterior sur</td>
<td>930</td>
</tr>
<tr>
<td>Contamination log/Planetary microbiological</td>
<td>321</td>
</tr>
<tr>
<td>(contamination logs) Planning, evaluation and analytical studies</td>
<td>51</td>
</tr>
<tr>
<td>(contamination logs) Planning, evaluation and analytical studies</td>
<td>52</td>
</tr>
<tr>
<td>(contamination logs) Planning, evaluation and analytical studies</td>
<td>53</td>
</tr>
<tr>
<td>(contamination)Mariner Mars 1971 planetary quarantine plan</td>
<td>540</td>
</tr>
<tr>
<td>(contamination) Microbiological cleanliness at JPL's EASL and SADL</td>
<td>867</td>
</tr>
<tr>
<td>(contamination) Microbiological burden on the surfaces of Explore</td>
<td>960</td>
</tr>
<tr>
<td>(contamination) Microbiological burden on the surfaces of the AIM</td>
<td>961</td>
</tr>
<tr>
<td>(contamination) Microbiological burden on the surfaces of the AIM</td>
<td>962</td>
</tr>
<tr>
<td>(contamination) Microbiological burden on the surfaces of the AIM</td>
<td>963</td>
</tr>
<tr>
<td>(contamination) Microbiological burden on the surfaces of the AIM</td>
<td>964</td>
</tr>
<tr>
<td>(contamination) Microbiological exploration of the stratosphere</td>
<td>876</td>
</tr>
<tr>
<td>(contamination) Microbiological flora of the Gemini IX spacecraft</td>
<td>568</td>
</tr>
<tr>
<td>(contamination) Microbiological studies conducted in a vertical l</td>
<td>722</td>
</tr>
<tr>
<td>(contamination) Microbiological studies conducted in the Experiment</td>
<td>723</td>
</tr>
<tr>
<td>(contamination) Microbiological studies on planetary quarantine</td>
<td>656</td>
</tr>
<tr>
<td>(contamination) Microbiological survey of environmentally control</td>
<td>869</td>
</tr>
</tbody>
</table>
Microbiological techniques for recovery from inte
Microbiology quality activities for a planetary m
Microscopic method of particulate
Monitoring airborne particulate
(Monitoring clean areas
Monitoring of laminar downflow clean rooms
(Monitoring of laminar downflow clean rooms
NASA standard procedures for the microbiological
contamination obtained on surfaces exposed to room air or touche
contamination of a planet/Analysis and sensitivity studies relat
contamination of a surface by handling/Microbial
Contamination of Mars
contamination of Mars. Cold and aridity as constraints on the su
contamination of Mars/Probability of biological
contamination of Mars/Spacecraft sterilization and
contamination of Mars. Survival of terrestrial microorganisms in
Contamination of planets
contamination of planets and the Earth/Dangers of
Contamination of planets by nonsterile flight hardware
contamination of space with terrestrial life/Discussion of a pos
contamination of surfaces/Comparative evaluation of methods for
contamination of the planets by unsterile spaceflight hardware/T
contamination on flat surfaces/Effect of time and temperature in
contamination on space hardware/Factors influencing the detectio
contamination on surfaces by chemical approaches/Detection of lo
contamination on surfaces by chemical approaches/Detection of lo
contamination on surfaces by chemical approaches/Detection of lo
contamination on surfaces by chemical approaches/Detection of lo
contamination on surfaces by chemical approaches/Detection of lo
contamination on surfaces. Evaluation of leakage of microbial co
contamination on surfaces. Evaluation of leakage of microbial co
contamination on surfaces. Evaluation of leakage of microbial co
contamination on surfaces of space hardware by ultrasonics/Asses
contamination on surfaces/Services provided in support of the pl
contamination on surfaces/Services provided in support of the pl
contamination on surfaces/Services provided in support of the pl
contamination on surfaces/Services provided in support of the pl
contamination on surfaces/Use of ultrasonic energy in assessing
Organic constituent inventory for planetary fligh
Planetary quarantine provisions for unmanned plan
Planning study for an organic constituents invent
Potential effects of recent findings on spacecraft
contamination: Practical approach for developing sterilizing pro
Principles and applications of laminar-flow devic
contamination probabilities by non-landing vehicles/Estimation o
contamination probabilities due to flight of the U.S.S.R. Venus
tamination probability from viable organism penetration of bi
contamination probability/Mariner Venus 67 - prelaunch analysis
Procedures necessary for the prevention of planeta
Progressive biological monitoring on lunar orbite
Quality assurance requirements manual for planet 755 contamination. Recurring problem/Biological and chemical surface contamination. Reduction of microbial dissemination and germicid contamination. Re-evaluation of planetary quarantine constraints contamination requirements/Multi-stage decision model for mission contamination resulting from human contact/Spacecraft contamination/Scale-up of heat sterilization operations contamination/Services provided in support of the planetary quarantine services contamination/Services provided in support of the planetary quarantine services contamination/Services provided in support of the planetary quarantine services contamination/Services provided in support of the planetary quarantine services contamination/Spacecraft component survivability during entry contamination/Spacecraft sterilization and the prevention of planetary contamination/Spacecraft sterilization: Some specific examples contamination/Spacecraft sterilization - the grand requirements contamination/Statistical problems in the standardization of a modern contamination/Sterilization of electronic components of spacecraft contamination/Sterilization of space vehicles: the problem of microbial contamination/Sterilization of space vehicles to prevent extraterrestrial contamination/Sterilizing space probes contamination/Study of aseptic maintenance by pressurization contamination/Study of the application of laminar flow ventilation contamination/Study of the biological cleanability of surfaces contamination/Study of the thermal kill of viable organisms during contamination/Surface sampling with an agar spray technique contamination/Survey of electronic components contamination/Synergistic effects of ethylene oxide and other agents contamination/Systems analysis and clean room monitoring for planetary contamination/Systems analysis and clean room monitoring for planetary contamination/Techniques for the limitation of biological load contamination/Testing and fabrication of plastic vacuum probe systems contamination/The clean room in space technology contamination to which spacecraft components are subjected during contamination/Ultraclean technology contamination/Use of laminar airflow equipment in microbiology contamination/Use of laminar airflow for environmental control contamination/User's manual for planetary quarantine lunar program (COSPAR) Biological losses and the quarantine policy for Mars (COSPAR) Contamination control and sterilization in space program (COSPAR) Microbial survival after simulated meteoroid impact (COSPAR) Planetary microbiological contamination log (COSPAR) Planetary quarantine plan Voyager project
(COSPAR) Potential effects of recent findings on spacecraft sterilization 1079
(COSPAR) Potentially harmful effects of space experiments 230
(COSPAR) Probability of biological contamination of Mars 1211
(COSPAR) Procedures necessary for the prevention of planetary contamination 494
(COSPAR) Rational model for spacecraft sterilization requirements 113
(COSPAR) Relationship of planetary quarantine to biological search 686
COSPAR Resolution 26.5. Draft/National Aeronautics and Space Administration 483
COSPAR/Soviet spacecraft sterilization methods aired at 73
(COSPAR) Spacecraft sterilization and contamination of Mars 1031
(COSPAR) Spacecraft sterilization and planetary quarantine, background 390
(COSPAR) Spacecraft-sterilization issue may affect pace of Mars 37
criteria/Comparison of two model-discrimination studies 763
(criticism) Planetary quarantine and space vehicle sterilization 234
critique of current spacecraft sterilization standards 1063
cryobiologist's conjecture of planetary life 1061
(cryobiology) Life in extraterrestrial environments 467
(cryobiology) Life in extraterrestrial environments 469
(cryobiology) Low temperature growth characteristics of clostridial 1013
(cryobiology) Preliminary sublimation studies 1207
(cryogenics) Influence of a set of extremal factors on biological 70
crystals/Dry heat or gaseous chemical resistance of Bacillus subtilis 798
(cybernetics) Interactive computer information system for planetary 1007
(cybernetics) User's manual for planetary quarantine lunar program cycle for a possible Mars capsule 1296
cycles/Studies on ethylene oxide - Freon 12 decontamination and 534
decontamination compatibility tests/Anchored interplanetary monitoring 445
decontamination/Adsorption of formaldehyde by various surfaces 122
decontamination and dry heat sterilization cycles/Studies on ethylene oxide - Freon 12 decontamination and 621
decontamination and encapsulation of MOSFET circuitry/Handling, decontamination and sampling program for anchored interplanetary Decontamination and sterilization of lunar and planetary spacecraft 834
decontamination and sterilization of spacecraft/Proceedings of m 812
decontamination and sterilization on spacecraft polymeric materials decontamination and sterilization/Survey of certain nonthermal methods 1104
decontamination/Beta-propiolactone vapor 551
(decontamination) Biostatistics and space exploration: microbiology 218
(decontamination) Biostatistics and space exploration: microbiology 221
(decontamination) Clean assembly and sterilization laboratory 206
Decontamination, cleaning, coating and encapsulation of electron 674
(decontamination) Clean room facilities for Explorer 35 spacecraft 673
(decontamination) Comments on the in-flight recontamination hazard 1225
(decontamination) Disinfection of aerosol chambers with Beta-propiolactone 7
(decontamination) Disinfection of microbial aerosol chambers with 8
(decontamination) Efficiency of sterilants in terrestrial and extraterrestrial environments 1024
(decontamination) Environmental microbiology as related to planet 88
(decontamination) Environmental specification Voyager 1146
(decontamination) Martian quarantine risk model 1141
Method for disinfecting large enclosures with B
decontamination models/Estimation of the parameters in exponenti
models for count data/Exponential
decontamination of a spacecraft system/Biological
Decontamination of enclosed spaces with Beta-propiolactone vapor
decontamination of SADL facility/Sterilization assembly and deve
decontamination of spacecraft/Development of parametric data for
Decontamination of the AIMP-D spacecraft
Practical procedures for microbial
decontamination procedure: Control and determination of moisture
decontamination procedure: Quantitative estimation of ethylene o
decontamination procedure: Reactions in the decontamination cham
Quality assurance requirements manual for plane
Spacecraft sterilization requirements
Spacecraft sterilization: Specific examples
Sporicidal activity of ethylene oxide
Sterilising properties of ethylene oxide
Sterilizable liquid propulsion system
decontamination, sterilization and thermal vacuum exposures/Spac
Sterilization, and thermal vacuum on spacecraft
Sterilization. Selected bibliography from the l
Sterilization techniques
Sterilization system/Automatic ethylene oxide
decontamination techniques for space vehicles/Sterilization and
decontamination techniques/Spacecraft cleaning and
Testing a sterilizable liquid propulsion system
Use of ultraviolet radiation in microbiological
Valve bioload reduction and sterilization study
Effects of high intensity visible and ultraviolet l
Desert microflora
Desert microflora
Desert soil algae survival at extremely low t
Desiccation, and relative cleanliness) on the destruction of Bac
Effect of bacterial cell moisture on the sporicidal
Design criteria for typical planetary spacecraft to be sterilize
desorption of water by bacterial spores and its relation to dry
destruction of Bacillus subtilis var. niger spores with gaseous
destruction of microorganisms in dry heat/Effect of various gas
destruction of microorganisms/Thermal
destruction of spores in simulated space vehicle components/Dry
destruction patterns/Heat
destruction rate of bacterial spores/Effect of temperature and g
destruction rate of B. subtilis var. niger in a closed system/Dr
destruction rates of B. subtilis var. niger in a closed system:
destruction rates of B. subtilis var. niger in a closed system:
destruction rates of microorganisms on surfaces/Dry heat
destruction rates of microorganisms on surfaces/Dry heat
destruction studies/Dry heat destruction rates of B. subtilis va
detoxification/Paraformaldehyde for surface sterilization and
Development and application/Method for microbial surface sampli
Development and test of flexible film coupon strips for use as a
development in environmental microbiology/Research and
development laboratories EASL and SADL/Microbiological aspects o
Development of a biological indicator for dry heat sterilization
development of a mathematical model(s) for microbial burden pred
development of a mathematical model(s) for microbial burden pred
development of a mathematical model(s) for microbial burden pred
development of a mathematical model(s) for microbial burden pred
Development of an increased sampling rate monitoring system
developments in planetary quarantine/Recent
(devices)Advances in large-volume air sampling
(devices)Vacuum probe: new approach to the microbiological samp
(die-away)Development and test of flexible film coupon strips fo
(die-away)Stochastic model describing bacterial aerosol concentr
(die-off)Exponential decontamination models for count data
die-off of contaminants/Basic studies in environmental microbiol
Die-off of microbial contamination
(die-off)Survival of microorganisms on covered stainless steel i
(die-off)Thermal destruction of microorganisms
(diffusion barriers)Sterilization with gaseous ethylene oxide: r
diffusion model of dry heat sterilization/Investigations into a
dimension of the surface mass average and geometri
dimethyl sulfoxide on the sporicidal activity of ethylene oxide
dimethyl sulfoxide/Virucidal properties of
disinfectant/Beta-propiolactone vapor as a
(disinfectant)Sporicidal activity of sodium hypochlorite at subz
disinfecting large enclosures with Beta-propiolactone vapor/Meth
disinfection/Gaseous
disinfection/Kinetics of
Disinfection of aerosol chambers with Beta-propiolactone
Disinfection of heat-sensitive material by low-temperature steam
Disinfection of microbial aerosol chambers with Beta-propiolacto
dissemination and germicidal activity of ethylene oxide/Reductio
disseminator technique/Production of low concentration particula
distribution of the likelihood ratio statistics -2lnλn under a c
diurnal freezing and thawing/Response of spore-forming vs. nonsp
DNA in wet heat sterilization of microorganisms/Role of
downflow clean rooms/Monitoring of laminar
dry heat and ethylene oxide gas upon spore contamination located
(dry-heat)Bacteriology of clean rooms
(dry heat)Biological and engineering aspects of spacecraft steri
(dry heat)Clean room complex for microbial contamination control
(dry heat)Consideration for the Martians
(dry heat)Controlled contamination: Practical approach for devel
Control of microbial contamination

Dry heat: Design of apparatus, operational problems and preliminaries

Dry heat destruction of Bacillus subtilis spores on surfaces: effectiveness

Dry heat destruction of Bacillus subtilis var. niger spores located on a surface

Dry heat destruction of B. subtilis var. niger spores located in a space vehicle compartment

Dry heat destruction rate of bacterial spores: Effect of temperature

Dry heat destruction rates for microorganisms on open surfaces

Dry heat destruction rates of Bacillus subtilis var. niger in a space vehicle

Dry heat destruction rates of Bacillus subtilis var. niger in a space vehicle

Dry heat destruction rates of Bacillus subtilis var. niger in a space vehicle

Dry heat destruction rates of Bacillus subtilis var. niger in a space vehicle

Dry heat destruction rates of Bacillus subtilis var. niger in a space vehicle

Dry heat destruction rates of Bacillus subtilis var. niger in a space vehicle

Dry heat destruction rates of microorganisms on surfaces as a function of temperature

Dry heat destruction rates of microorganisms on surfaces as a function of temperature

Dry heat destruction rates of microorganisms on surfaces as a function of temperature

Dry heat destruction rates of microorganisms on surfaces: Study of the effect of temperature

Dry heat: Determination of terminal sterilization process parameters

Dry heat: Development of two closely controlled humidity systems

Dry heat: Ecology and thermal inactivation of microorganisms in and on a surface

Dry heat: Ecology and thermal inactivation of microorganisms in and on a surface

Dry heat: Ecology and thermal inactivation of microorganisms in and on a surface

Dry heat: Ecology and thermal inactivation of microorganisms in and on a surface

Dry heat: Ecology and thermal inactivation of microorganisms in and on a surface

Dry heat: Effect of microbial release probabilities on spacecraft sterilization

Dry heat: Effect of various gas atmospheres on destruction of microorganisms

Dry heat: Environmental microbiology as related to planetary quarantine

Dry heat: Environmental microbiology as related to planetary quarantine

Dry heat: Experimental study of sterile assembly techniques

Dry heat: Experimental study of sterile assembly techniques

Dry heat: Feasibility of thermoradiation sterilization of spacecraft surfaces

Dry heat: Handbook of biological aspects of spacecraft sterilization

Dry heat: Investigation of the feasibility of sterile assembly operations

Dry heat: Investigation of the feasibility of sterile assembly operations

Dry heat: Inactivation kinetics of naturally occurring spore populations

Dry heat: Investigation of bacterial contamination inside electronic equipment

(Dry heat): JPL spacecraft sterilization technology program: A status report

(Dry heat): Kinetic analysis of spore inactivation in a composite material

(Dry heat): Kinetics of disinfection

(Dry heat): Mathematical basis for a diffusion model of microbial inactivation

Dry heat: Measurement of the destruction of bacterial spores by heat

(Dry heat): Methods for spacecraft sterilization

(Dry heat): Microbiological assay of space hardware

(Dry heat): Microbiologic filters - liquid and gas

(Dry heat): Modern methods and means of sterilization of spacecraft surfaces

Dry heat on gaseous chemical resistance of Bacillus subtilis var. niger

(Dry heat): Optimizing thermal and radiation effects for bacterial spores

(Dry heat): Physical methods of sterilization of microorganisms
(dry heat) Potential effects of recent findings on spacecraft ster 1079
(dry heat) Precisely controlled, low range humidity system 408
(dry heat) Procedure manual for planetary spacecraft to be steril 657
(dry heat) Procedures for the microbiological examination of spac 352
(dry heat) Recent advances in microbiological environmental contr 917
(dry heat) Relative frequency distribution of $D_{125^\circ C}$ values for sp 90
(dry heat) Resistance of Bacillus subtilis var. niger/Influence of sp 31
(dry heat) Resistance of B. subtilis var. niger spores occluded in 286
Dry heat resistance of B. subtilis var. niger spores on mated su 1112
Dry heat resistance of bacterial spores recovered from Mariner M 1256
Dry heat resistance of naturally occurring organisms widely disp 410
Dry heat resistance of spores of Bacillus subtilis var. niger on 145
Dry heat resistance studies/Reproducibility of results in 784
(dry heat) Resistivity of microorganisms to inactivation by 1102
(dry heat) Services provided in support of the planetary quarant 358
(dry heat) Services provided in support of the planetary quarant 368
(dry heat) Services provided in support of the planetary quarant 1219
(dry heat) Spacecraft sterilization, techniques and equipment 845
(dry heat) Spacecraft sterilization. Thermal considerations 400
(dry heat) Special problem of encapsulated contaminants 133
(dry heat) Sterilizable photomultiplier tubes 299
(dry heat) Sterilization 281
(dry heat) Sterilization: A general review/Biological and physical 140
(dry heat) Sterilization cycles/Studies on ethylene oxide - Freon 621
(dry heat) Sterilization/Development of a biological indicator for 582
Dry heat sterilization for planetary-impacting spacecraft 136
Dry heat sterilization for planetary-impacting spacecraft 137
Dry heat sterilization: Its development and application to compo 144
Dry heat sterilization modeling 116
(dry heat) Sterilization/Observations regarding factors important 891
Dry heat sterilization of interplanetary vehicles 884
(dry heat) Sterilization of microorganisms at 105°C/Study of 946
(dry heat) Sterilization of microorganisms/Role of water activity 120
(dry heat) Sterilization of space hardware 892
(dry heat) Sterilization of space probe components 142
(dry heat) Sterilization of space probe components 649
(dry heat) Sterilization procedures for planetary landers 391
(dry heat) Sterilization procedures on polymeric products/Effects 617
(dry heat) Sterilization/Protective mechanism affecting 27
(dry heat) Sterilization studies/Quantitative spore recoveries fro 944
(dry heat) Sterilization techniques 586
(dry heat) Studies for sterilization of space probe components 650
(dry heat) Studies of spacecraft sterilization parameters 1255
Dry heat survival of Bacillus subtilis var. niger in association 746
(dry heat) Systems analysis and clean room monitoring for planet 1044
(dry heat) Systems analysis and clean room monitoring for planeta 1046
(dry heat) Terminal sterilization process calculation for spacecr 545
(dry heat) Thermal destruction of microorganisms 896
Dry heat upon dry bacterial spores/Effect of 931

127
Voyager effort focused on sterilization

D-value for spore isolates from the Mariner-Mars 1969 space

Data provided in support of the planetary quarantine

Analytical basis for planetary quarantine

Contamination control in the manufacturing sequence

Detection of low levels of microbial contamination on surfaces

Dry heat destruction of Bacillus subtilis spores on surfaces

Dry heat destruction rates for microorganisms on open surfaces

Dry heat destruction rates of Bacillus subtilis var. nih"u

Dry heat destruction rates of Bacillus subtilis var. nih"u

Dry heat destruction rates of Bacillus subtilis

Dry heat destruction rates of Bacillus subtilis var. nih"u

Dry heat destruction rates of Bacillus subtilis

Dry heat resistance of spores of Bacillus subtilis var. nih"u

Ecology and thermal inactivation of microbes in and on surfaces

Effect of humidity, location, surface finish and separation

Effect of relative humidity on the penetrability and spore viability

Effect of temperature and gas velocity on the dry-heat sterilization for planetary-impacting spacecraft

Ecology and thermal inactivation of microbes in and on surfaces

Ecology and thermal inactivation of microbes in and on surfaces

Ecology and thermal inactivation of microbes in and on surfaces

Ecology and thermal inactivation of microbes in and on surfaces

Ecology and thermal inactivation of microbes in and on surfaces

Ecology and thermal inactivation of microbes in and on surfaces

EFect of humidity, location, surface finish and separation

Germicidal activity of ethylene oxide/14 summary report

Inactivation and division delay of E. coli B/r by combination

Influence of spore moisture content on the dry-heat sterilization

Measurement of the destruction of bacterial spores by dry heat

Methodology of measuring internal contamination in spacecraft

Microbial resistance to ethylene oxide

Microbial sterilization in ultra-high vacuum and outer space

Microbial aspects of ethylene oxide sterilization

Microbiological aspects of ethylene oxide sterilization

Observations on bacterial thermal death time curves

Properties of heat-resistant and heat-sensitive strains

Reproducibility of results in dry heat resistance studies

Services provided in support of the planetary quarantine

Services provided in support of the planetary quarantine

Services provided in support of the planetary quarantine

Services provided in support of the planetary quarantine

Services provided in support of the planetary quarantine

Services provided in support of the planetary quarantine

Services provided in support of the planetary quarantine

Services provided in support of the planetary quarantine
Services provided in support of the planetary quarantine
Space vehicle sterilization problem
Sporicidal activity of ethylene oxide
Sterilization of space hardware
Study of dry heat sterilization of microorganisms at 10
Synergistic characteristics of thermoradiation sterilization
Thermal death of Bacillus subtilis var. niger spores on
Thermal destruction of microorganisms
D, z, and Aw value investigations/Status report on

EASL-SADL test and operations. Summary
EASL and SADL/Microbial cleanliness at JPL's
EASL and SADL/Microbiological aspects of sterilization assembly
(EASL)Microbiological survey of environmentally controlled areas
eccofoam FP and diatomaceous earth/Recovery of vegetative bacteria
electrophoresis/Rapid identification of microorganisms by contin
capsulation of contaminants/Special problem of
Encapsulation, electronics, eccofoam
encapsulation of MOSFETS circuitry/Handling, cleaning, decontami
(environment)Absorption and desorption of ethylene oxide
(environment)Absorption-desorption of water by bacterial spores
environmentally controlled areas/Microbiological survey of
Environmental microbiology/Bibliography on planetary quarantine
environmental microbiology/Research and development in
environmental microbiology/Short courses on basic
environmental microbiology/Short courses on basic
environmental studies/Natural space
environmental understanding/Automatic biodetecting and monitorin
(environment)Analytical basis for planetary quarantine
(environment)Analytical basis for the estimation of planetary co
environment and possible biology of Mars/Surface
(environment)Apollo and contamination control. McDonnell Douglas
(environment)Atmosphere of Mars and Venus
(environment)Atmospheric contaminants in spacecraft
(environment)Avionics clean room
(environment)Bacterial response to the soil
(environment)Bacteria under simulated Martian conditions
(environment)Bacteriology of clean rooms
(environment)Behavior of certain soil microorganisms in the "art
(environment)Biological evaluation of the biodetection grinder
(environment)Class 100 clean room program
environment/Clean room and work station requirements, controlled
(environment)Clean room facilities for Explorer 35 spacecraft
(environment)Clean room in space technology
(environment)Clean room personnel
(environment)Comparative evaluation of methods for the search fo
(environment)Computerized program for statistical treatment of b
Conceptual design study of a terminal sterilization 46
Contamination control: a very old, new field 406
Contamination control. State-of-the-art review 1272
Contamination levels in a laminar flow operating room 393
Contributions of microbiological safety to space re-
control at Riker laboratories/HEPA:LAF 415
Control of microbiological hazards in the laborator-
environment criteria for the NASA Space Station Program/Natural 1262
environment criteria guidelines for use in space vehicle develop-
environment/Cryobiologist's conjecture of planetary life 1061
Defining Mars' atmosphere - a goal for the early mi-
Deposition of nutrients to surfaces by Rodac plates 63
Designing for the laminar flow 1273
Detection of low levels of microbial contamination 875
Determination of quantitative microbial sampling re-
Development of a laminar airflow biological cabinet 1002
Die-off of microbial contamination 1236
Discussion of a possible contamination of space with 152
Dry heat destruction rates of Bacillus subtilis var 789
Dry heat sterilization modeling 116
Ecology and thermal inactivation of microbes in and 982
Effect of $A_w$ on the sporicidal activity of ethylene 636
Effect of decontamination sterilization, and thermal 1015
Effect of high intensity visible and ultraviolet li-
Effect of hyperoxia upon microorganisms. Membrane c 134
Effect of temperature and gas velocity on the dry h 396
Effect of ultraviolet on the survival of bacteria a 472
effect of ultraviolet radiation upon microorganisms 382
Effectiveness of laminar air flow for controlling a 530
Effects of simulated Venus atmosphere on polymeric 618
Engineering guidelines for clean assembly and steri-
Ethylene oxide sterilization rates and protective i 547
Evaluation of new penetrating sporicide potentially 4
Experimental approaches to controlling the 769
Feasibility study of an experiment for determining 12
Germicidal activity of ethylene oxide 822
Germination and growth of bacterial spores/Studies 1009
Handbook for contamination control on the Apollo pr 804
Heat resistance of Bacillus subtilis spores in atmo 587
Ice caps on Venus 689
Instrument for study of microbial thermal inactivat 274
Integrated lethality of sterilization temperature p 239
Investigations into a diffusion model of dry heat s 60
Investigations of methods for the sterilization of 1201
Kinetic analysis of spore inactivation in a composit 295
Life in the clouds 35
Martian scene 533
Martian surface simulation facility for bacterial s 231
Mathematical model for the thermoradiation inactiva 296
Mathematical model of the effect of a predator on s 1299
Microbial analysis

Microbial contamination control after terminal ster 1305
Microbial contamination detected on the Apollo 9 sp 972
Microbial release from solids after simulated hard 398
environment/Microbial survival in deep space 1101
Microbiological analysis of snow and ice from the A 662
Microbiological methods of testing the atmosphere 1233
Microbiological monitoring of spacecraft assembly f 190
Microbiological sampling of returned Surveyor III e 646
Microbiological studies on planetary quarantine 656
environment/Microorganism study: bacterial isolants from harsh 82
environment/Microorganisms under simulated Martian 522
Model for the quantification of the qualitative mic environment. Moisture and oxygen requirements for Bacillus cereu 474
Monitoring clean areas 725
Monitoring of sterile areas 726
New approaches to contaminant control in spacecraft 42
New concepts in contamination control for Titan III 756
1973 Viking voyage to Mars 1248
environment on biological burden during spacecraft assembly/Effe 1164
Panspermia revisited, or have we already contaminat 567
Planetary probe-origin of atmosphere of Venus 797
Planetary quarantine constraints for advanced missi 424
Possible contamination of earth by lunar or Martian 6
Possibility of survival of terrestrial organisms un 684
Possibility of the spreading of viable germs in out 383
Post-launch recontamination studies 744
Preliminary analysis of the radiation burden of a t 297
Present day usage of clean rooms in medical and lif 409
Problems posed by the planet Venus 836
Quality assurance monitoring of the microbial biological 413
Recent developments in planetary quarantine 487
Reduction of microbial dissemination and germicidal 819
Reproducibility of results in dry heat resistance s 784
Research study to definitize a bio-isolator suit sy 420
environment/Response of microorganisms to a simulated Martian 524
Response of spore-forming vs. nonspore-forming bact 1303
Review of the possible existence of a Jovian atmosp 1130
Role of soil science in space exploration 163
environments/Ability of microorganisms to establish ecological n 470
environments/Associated with the sterilization of planetary caps 625
environments/Biochemical activities of terrestrial microorganism 158
environments/Biological contamination of Mars. Survival of terre 1082
environments/Biological contamination of Mars. Cold and aridity 866
Search for life on Mars - where we stand today 562
environments/Efficiency of sterilants in terrestrial and extrate 1024
environments/Environmental specification Voyager capsule flight 1146
Services provided in support of the planetary quara 365
Simulation of the Venus atmosphere 1100
environments/Ethylene oxide sterilization of spores in hygroscop 854
Environmental microbiology as related to planetary quarantine 88
Environmental microbiology as related to planetary quarantine 783
Environmental microbiology as related to planetary quarantine 885
Environmental microbiology as related to planetary quarantine 886
Environmental microbiology as related to planetary quarantine 887
Environmental microbiology as related to planetary quarantine 888
Environmental microbiology as related to planetary quarantine 1235
Environmental microbiology as related to planetary quarantine/Ba 782
ethylene oxide/Absorption and desorption of 449
ethylene oxide and methyl bromide against microorganisms on vari 949
(ethylene oxide and methyl bromide)Dry heat on gaseous chemical 798
ethylene oxide and methyl bromide mixture/Efficiency of steriliz 1229
ethylene oxide and other agents/Synergistic effects of 628
(ethylene oxide)Assembly of CMTM for purposes of determining are 130
ethylene oxide/Bibliography on applications of 1291
ethylene oxide - carbon dioxide mixtures on bacteria and bacteri 151
(ethylene oxide)Comparative studies of conceptual design and qua 999
ethylene oxide concentration by gas chromatography/The ethylene 620
(ethylene oxide)Contamination control and sterilization in space 823
ethylene oxide cycle for decontamination of spacecraft/Developme 245
ethylene oxide decontamination environments/Environmental specif 1146
ethylene oxide decontamination system/Automatic 1097
ethylene oxide/Effect of $A_w$ on the sporicidal activity of 636
(ethylene oxide)Effect of decontamination sterilization, and the 1015
ethylene oxide. Effect of dimethyl sulfoxide on the sporicidal a 1135
ethylene oxide. Effect of ethylene oxide and related compounds u 627
ethylene oxide. Effect of moisture/The sterilizing action of 629
(ethylene oxide)Effects of decontamination and sterilization on 679
(ethylene oxide)Evaluation of new penetrating sporicide potentia 1025
(ethylene oxide)Evaluation of sterilization by gaseous oxide 4
ethylene oxide for sterilization: a partially annotated bibliogr 1149
ethylene oxide - Freon 12 and heat/Surveyor sterilization 921
ethylene oxide - Freon 12 and its compatibility with materials a 1283
ethylene oxide - Freon 12 decontamination and dry heat steriliza 1285
ethylene oxide - Freon 12 decontamination and dry heat steriliza 617
ethylene oxide - Freon 12 decontamination procedure: Control and 621
ethylene oxide - Freon 12 decontamination procedure: Quantitativ 1099
ethylene oxide - Freon 12 decontamination procedure: Reactions i 620
(ethylene oxide - Freon 12)Experimental study of sterile assembl 619
(ethylene oxide - Freon 12)Experimental study of sterile assembl 499
ethylene oxide - Freon 12 sterilant gas mixture/Literature revie 719
(ethylene oxide - Freon 12)Surveyor sterilization. Studies of st 1026
(ethylene oxide)Gaseous disinfection 1286
(ethylene oxide)Gaseous sterilization 143
Ethylene oxide gaseous sterilization. Concentration and temperat 138
Ethylene oxide gaseous sterilization. Influence of method of hum 310
ethylene oxide gas mixtures/Sterilization with 311
ethylene oxide gas on Scotch tape/Penetrability and effect of 193
ethylene oxide gas on Scotch tape/Penetrability and effect of 943a

133
ethylene oxide gas upon spore contamination located between mate
(ethylene oxide)Germicidal activity of
(ethylene oxide)Handbook of biological aspects of spacecraft ste
ethylene oxide/Influence of various pretreatments [carriers, des
(ethylene oxide)Investigation of microbial contamination inside
(ethylene oxide)Investigation of a sono-chemical approach in ste
(ethylene oxide)Investigation of a sono-chemical approach in ste
(ethylene oxide)Investigation of a sono-chemical approach in ste
(ethylene oxide)Investigation of a sono-chemical approach in ste
(ethylene oxide)Limitations of thioglycolate broth as a sterilit
ethylene oxide - methyl bromide sterilization of very dry spore
ethylene oxide/Microbial resistance to
(ethylene oxide)Penetration by gases to sterilize interior surfa
(ethylene oxide)Principles and applications of laminar flow devi
ethylene oxide process specifications and procedures/Development
ethylene oxide process specifications and procedures/Development
ethylene oxide/Properties and essential information for safe han
(ethylene oxide)Recent advances in microbiological environmental
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
ethylene oxide/Reduction of bacterial dissemination; germicidal
(ethylene oxide)Resistance of B. subtilis var. niger spores occl
Ethylene oxide resistance of nondesiccated and desiccated spores
ethylene oxide resistances of Bacillus subtilis and Staphylococc
ethylene oxide: Review of chemical and physical factors/Steriliz
ethylene oxide. Review/Sterilizing action of gaseous
(ethylene oxide)Semiannual review of research and advanced devel
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
(ethylene oxide)Services provided in support of the planetary qu
ethylene oxide/The age of *Bacillus subtilis* spores and their res
(ethylene oxide)The Model Assembly Sterilizer for Testing (MAST)
(ethylene oxide)Voyager effort focused on sterilization/
exobiological space probes/Dry heat sterilization: Its developme
(exobiology)Atmospheres of Mars and Venus
(exobiology)Consideration for the Martians
(exobiology)Contamination control
(exobiology)Dangers of contamination of planets and the Earth
(exobiology)Defining Mars' atmosphere - a goal for the early mis
(exobiology)Effects of sterilization in spacecraft design
(exobiology)General review of chemical sterilization in space re
(exobiology)Hypothetical Martian biosphere
(exobiology)Life detection systems
(exobiology)Life in extraterrestrial environments
(exobiology)Life in the clouds
(exobiology)Mathematical models for contamination and pollution
(exobiology)Multi-stage decision model for mission non-contamina
(exobiology)1973 Viking voyage to Mars
(exobiology)Planning study for an organic constituents inventory
(exobiology)Possible contamination of earth by lunar or Martian
(exobiology)Research and development in environmental microbiolo
(exobiology)Spacecraft sterilization
(exobiology)Spacecraft sterilization - the grand requirements
(exobiology)Space probe sterilization
(exobiology)Sterilization and storage compatibility study of gro
(exobiology)Sterilization of electronic components of spacecraft
(exobiology)Sterilizing unmanned spacecraft
(exobiology)Viruses respond to environmental exposure
Experimental approaches to controlling the environment
Experimental Assembly and Sterilization Lab (EASL) microbiologic
Experimental Assembly and Sterilization Laboratory (EASL)/Microb
Experimental Assembly and Sterilization Laboratory (EASL)/Microb
Experimental heat chamber for sterilization of large interplanet
Experimental heat chamber for sterilization of large interplanet
exploration/Sterilizability of scientific payloads for planetary
exploration/Sterilization requirements for space
Explorer XXXIII spacecraft/Microbiological burden on the surface
Explorer XXXV spacecraft/Clean room facilities for assembly of
exponential model/Estimation for a one-parameter
exponential model/Estimation for a simple
exponential model/Spearman estimation for a simple
exponentials/Method for fitting linear combinations of
(extrapolation)Effect of low numbers of microorganisms on sample
extrapolation of microbial survivor curves for planetary quant
extraterrestrial biological contamination/The sterilization of s
extraterrestrial environments/Efficiency of sterilants in terres
extraterrestrial environments/Life in
extraterrestrial environments/Life in
extraterrestrial environments/Life in
136
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>extraterrestrial life detection/Experiments and instrumentation</td>
<td>682</td>
</tr>
<tr>
<td>Ice caps on Venus</td>
<td>689</td>
</tr>
<tr>
<td>Planetary quarantine progress</td>
<td>824</td>
</tr>
<tr>
<td>Possibility of survival of terrestrial or extraterrestrial space</td>
<td>684</td>
</tr>
<tr>
<td>ecology/Exposure of microorganisms to sim</td>
<td>1105</td>
</tr>
<tr>
<td>extraterrestrial use/Phase of a sterilization and storage compat</td>
<td>761</td>
</tr>
<tr>
<td>facilities for assembly, Explorer XXXV spacecraft/Clean room</td>
<td>673</td>
</tr>
<tr>
<td>Sterilization</td>
<td>663</td>
</tr>
<tr>
<td>Filter applications for spacecraft sterilization program</td>
<td>258</td>
</tr>
<tr>
<td>Designing for the laminar flow environments</td>
<td>1273</td>
</tr>
<tr>
<td>Germicidal activity of ethylene oxide</td>
<td>822</td>
</tr>
<tr>
<td>HEPA:LAF environmental control at Riker laboratories</td>
<td>415</td>
</tr>
<tr>
<td>Its potentials and limitations/The absolute</td>
<td>1128</td>
</tr>
<tr>
<td>Monitoring of sterile areas</td>
<td>725</td>
</tr>
<tr>
<td>Clean room in space technology</td>
<td>793</td>
</tr>
<tr>
<td>Outlines for state-of-the-art documents</td>
<td>712</td>
</tr>
<tr>
<td>Reduction of microbiological shedding in clean rooms</td>
<td>1123</td>
</tr>
<tr>
<td>filters to sterilize liquids and gases/Evaluation of</td>
<td>307</td>
</tr>
<tr>
<td>Use of laminar flow for environmental control</td>
<td>1271</td>
</tr>
<tr>
<td>Certification of probability of sterilization of liquids</td>
<td>950</td>
</tr>
<tr>
<td>Method for obtaining free bacterial spores of Bacillus</td>
<td>957</td>
</tr>
<tr>
<td>filtration/Emulsions of submicron virus aerosols</td>
<td>500</td>
</tr>
<tr>
<td>Designing for the laminar flow environments</td>
<td>122</td>
</tr>
<tr>
<td>Formaldehyde by various surfaces during gaseous decontamination</td>
<td>568</td>
</tr>
<tr>
<td>Disinfection of heat-sensitive material by heat sterilization</td>
<td>12</td>
</tr>
<tr>
<td>Effect of relative humidity on the penetrability an</td>
<td>553</td>
</tr>
<tr>
<td>Formaldehyde/Gaseous disinfection</td>
<td>143</td>
</tr>
<tr>
<td>Investigation of methods for the sterilization of</td>
<td>1195</td>
</tr>
<tr>
<td>Investigation of methods for the sterilization of</td>
<td>1196</td>
</tr>
<tr>
<td>formaldehyde/Investigation on the sterilization efficacy of gas</td>
<td>838</td>
</tr>
<tr>
<td>formaldehyde-methanol solutions with formaldehyde-water solution</td>
<td>1284</td>
</tr>
<tr>
<td>Surveyor sterilization. Studies of sterilization</td>
<td>1286</td>
</tr>
<tr>
<td>formaldehyde-water solutions/Comparison of sterilizing properties</td>
<td>1284</td>
</tr>
<tr>
<td>fractured solids/Release of microbial contamination from</td>
<td>880</td>
</tr>
<tr>
<td>Freon 12 decontamination and dry heat sterilization cycles/Study</td>
<td>1303</td>
</tr>
<tr>
<td>Freon 12 decontamination procedure: Control and determination of</td>
<td>167</td>
</tr>
<tr>
<td>Freon 12 decontamination. Quantitative estimation of ethylene ox</td>
<td>621</td>
</tr>
<tr>
<td>Freon 12 - ethylene oxide sterilant gases/Compatibility of Centa</td>
<td>1298</td>
</tr>
<tr>
<td>gamma and x-rays upon dry bacterial spores/Effect of</td>
<td>932</td>
</tr>
<tr>
<td>Gamma irradiation of B. subtilis spores</td>
<td>207</td>
</tr>
</tbody>
</table>
gamma radiation environment/Kinetic analysis of spore inactivation
(gamma radiation)Study of the effectiveness of thermoradiation sterilization
(gamma radiation)Thermoradiation as a means of bacterial sterilization
 gamma sterilization/Investigation of garments/evaluation of two NASA biological isolation
gas chromatography/Ethylene oxide - Freon 12 decontamination process
gaseous chemical resistance of Bacillus subtilis var. niger spor
 gaseous ethylene oxide/Influence of various pretreatments [carried] gaseous ethylene oxide: Review of chemical and physical factors Gaseous sterilization gases/Evaluation of filters to sterilize liquids and Gemini IX spacecraft before and after flight/Microbiological flow Gemini space suit/Evaluation of leakage of microbial contaminants
germicidal activity of ethylene oxide/Reduction of microbial disinfection germicidal activity of ethylene oxide/Reduction of microbial disinfection germicidal activity of ethylene oxide/Reduction of microbial disinfection germicidal activity of ethylene oxide/Reduction of microbial disinfection germicidal activity of ethylene oxide/Reduction of microbial disinfection germicides/Criteria for selection of germination/Survival of microorganisms in a simulated Martian environment
 gnotobiotic technology/Sterile insertion - an aerospace application Gnotobiotechnology in relation to space biology (gnotobiotics)Sterilization literature abstracts (gnotobiotics)Ultraclean technology growth characteristics of clostridia/Low temperature growth detection in the search for extraterrestrial life/Analysis growth/Effect of reduced barometric pressure on water availability (growth)Effects of simulated space vacuum on bacterial cells (growth)Inactivation and division delay of E. coli B/r by combination (growth)Mathematics of microbial populations growth media for extraterrestrial use/Sterilization and storage growth media for extraterrestrial use/Sterilization and storage Growth of aerobic and anaerobic bacteria in agar subjected to freezing growth (P.g) of viable microorganisms in Martian environments/Pro guidelines for clean assembly and sterilization of spaceflight hardware handbook/Contamination control handbook for engineers/Procedure manual for planetary spacecraft handbook/Sterilization (hardware)Apollo and contamination control. Boeing's role (hardware)Application of thermal modeling to space vehicle sterilization (hardware)Assembly of CMTM for purposes of determining areas of (hardware)Assembly/sterilizer facility feasibility program final (hardware)Assembly/sterilizer - facility for the sterilization of (hardware)Bacteriology of clean rooms (hardware)Biostatistics and space exploration: microbiology and
hardware by ultrasonics/Assessment of microbial contamination on (hardware)Class 100 clean room program. Pilot shop operations 967
(hardware)Clean assembly and sterilization laboratory 733
(hardware)Clean room in space technology 206
(hardware)Conceptual design study of a terminal sterilization ch 46
(hardware)Contamination of planets by nonsterile flight 193
(hardware)Continuation of the development of a typical Mars land 47
(hardware)Continuation of the development of a typical Mars land 48
(hardware)Control of microbial contamination 716
(hardware)Control of microbiological hazards in the laboratory 907
(hardware)Development of a laminar airflow biological cabinet 1
(hardware)Development of a typical Mars landing capsule steriliz 751
(hardware)Development of mechanical sterile insertion engineering 277
(hardware)Disinfection of aerosol chambers with Beta-propiolacto 7
(hardware)Dry heat destruction rates for microorganisms on open 884
(hardware)Effects of decontamination sterilization, and thermal 1015
(hardware)Engineering guidelines for clean assembly and steriliza 237
(hardware)Environmental microbiology as related to planetary qua 86
(hardware)Evaluation of new penetrating sporicide potentially us 4
(hardware)Experimental heat chamber for sterilization of large i 103
(hardware)Experimental heat chamber for sterilization of large i 104
(hardware)Experimental heat chamber for sterilization of large i 105
(hardware)Experimental heat chamber for sterilization of large i 106
(hardware)Experimental heat chamber for sterilization of large i 107
(hardware)Experimental heat chamber for sterilization of large i 108
(hardware)Experimental heat chamber for sterilization of large i 501
(hardware)Factors influencing detection and enumeration of microb 347
(hardware)Feasibility of thermoradiation for sterilization of sp 994
(hardware)Improved model of the vacuum probe 796
(hardware)Integrated lethality of sterilization temperatures pro 239
(hardware)Interactive computer information system for planetary 1007
(hardware)Investigation of the feasibility of sterile assembly o 1021
(hardware)Microbiological aspects of sterilization assembly deve 868
(hardware)Microbiological assay of space 349
(hardware)Monitoring clean areas 725
(hardware)NASA's current edition/Procedures for the microbiologi 352
(hardware)NASA standard procedures for the microbiological examin 805
(hardware)NASA standard procedures for the microbiological examin 806
(hardware)Objectives and technology of spacecraft sterilization 493
(hardware)Paraformaldehyde for surface sterilization and detoxif 1172
(hardware)Planetary quarantine. Techniques for the prevention of 235
(hardware)Principles and applications of laminar-flow devices 727
(hardware)Potential effects of recent findings on spacecraft ste 1079
(hardware)Quality assurance monitoring of the microbiological as 413
(hardware)Recommendations for determination of spacecraft steril 1145
(hardware)Review of naturally occurring interior microbial contam 1243
(hardware)Spacecraft sterilization and the prevention of planeta 488
(hardware)Spacecraft sterilization: Some specific examples 844
(hardware)Status review of technology developments for spacecraf 259
(hardware)Sterile access studies in the pilot assembly steriliza 344

139
hardware sterility/Experimental Assembly and Sterilization Lab
(hardware)Sterilization and thermal-vacuum effects on spacecraft 93
(hardware)Sterilization of electronic components of spacecraft 1017
hardware/Sterilization of space 212
(hardware)Studies of spacecraft sterilization parameters 892
hardware/Techniques for the prevention of contamination of the p 1255
(hardware)Thermal death of Bacillus subtilis var. niger spores o 235
(hardware)Traditional concepts for contamination control 871
(hardware)User's manual for planetary quarantine lunar programs 914
heat activation and of thermal death of bacterial spores/Kinetic 1096
heat and gamma radiation environments/Kinetic analysis of spore 295
Heat and radiation resistance and activation of spores of Clostr 1013
heat and radiation/Study of the factors influencing sterilization 1288
heat/Bibliography on inactivation of viruses and rickettsiae by 1260
heat chamber for sterilization of large interplanetary structure 101
heat chamber for sterilization of large interplanetary structure 102
heat destruction of microorganisms located in these areas/Study 291
heat destruction of spores in simulated space vehicle components 31
Heat destruction patterns 545
heat destruction rate of bacterial spores/Effect of temperature 396
(heat)Effect of sterilization in spacecraft design 841
(heat)Hot air sterilization at 200° 976
(heat)Improved method of spacecraft sterilization 1035
heat in Bacillus subtilis/Sporulation mutations induced by 840
Heat injury of Bacillus subtilis spores at ultrahigh temperature 303
(heat)Investigation of microbial contamination inside irradiated 940
(heat)Mathematical model for the thermoradiation inactivation of 296
(heat)Microbiological aspects of ethylene oxide sterilization. E 639
(heat)Optimization of oven-heating profiles in spacecraft steril 331
(heat)Place of radiation sterilization in combined techniques 622
(heat)Planning, evaluation and analytical studies in planetary q 322
(heat)Practical procedures for microbial decontamination 916
heat resistance and toxigenicity/Properties of heat-resistant an 1264
(heat resistance)Bacteriology of clean rooms 768
(heat resistance)Biophysical analysis of the spore 748
Heat resistance of Bacillus subtilis spores in atmospheres of di 587
heat resistance of Bacillus subtilis var. niger/Influence of spo 31
Heat resistance of spores of Bacillus subtilis var. niger on Kap 145
(heat resistance)Services provided in support of the planetary q 369
(heat resistance)Services provided in support of the planetary q 370
heat-resistant and heat-sensitive strains of Clostridium perfrin 1264
heat/Resistivity of microorganisms to inactivation by dry 1102
heat/Resistivity of microorganisms to thermal inactivation by dr 1103
heat-sensitive material by low-temperature steam and formaldehyd 2
(heat)Spacecraft sterilization - implications and suggestions 246
(heat)Spacecraft sterilization procedures in the USSR 743
heat specifications/Review of 870
heat specifications/Review of 1253
heat specifications/Review of 1254
Novel multi-slit large volume air sampler
Impregnation/Evaluation of a NASA biological isolation garment
Inactivation and division delay of E. coli B/r by combined treatment
Inactivation by dry heat/Resistivity of microorganisms to
Inactivation characteristics of Bacillus subtilis at ultrahigh temperature
Inactivation in a composite heat and gamma radiation environment
Inactivation/Instrument for study of microbial thermal
Inactivation kinetics of naturally occurring spore populations
Inactivation of bacterial spores/Probit method to interpret thermal inactivation of Bacillus subtilis var. niger spores/Mathematical
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of microbes in and on interplanetary space vehicle
Inactivation of viruses and rickettsiae by heat/Bibliography on
Inactivation/optimizing thermal and radiation effects for bacterial spores/Precision controlled, low range humidity system
Inactivation rate of bacterial spores/Effect of cell moisture on
Synergistic characteristics of thermoradiation sterilization
Information system for planetary quarantine for lunar programs/Information system using the CDC 217 remote console/User's manual
Inhibition of spore germination by alcohols/Reversible
Services provided in support of the planetary quarantine/instrument requirements/sampling of planetary surface solids for instrumentation and automation/AEC/NASA symposium on contamination
Instrumentation and methodology in measurement of viable and non-viable biological materials/AEC/NASA symposium on contamination
Automatic, instantaneous monitor for counting targets
Model for determining the probability of failure
Monitoring a class 100 clean room

142
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacuum probe for removing microorganisms for co</td>
<td>795</td>
</tr>
<tr>
<td>interplanetary exploration/Problems in the design of unmanned sp</td>
<td>1209</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>777</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>13</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology ann thermal inac</td>
<td>14</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>15</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>16</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>17</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>18</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>19</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>20</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>21</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>22</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>23</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>24</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>25</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>26</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>174</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>175</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>985</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>986</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>987</td>
</tr>
<tr>
<td>interplanetary space vehicle components/Ecology and thermal inac</td>
<td>988</td>
</tr>
<tr>
<td>interplanetary structures/Experimental heat chamber for steriliz</td>
<td>101</td>
</tr>
<tr>
<td>interplanetary structures/Experimental heat chamber for steriliz</td>
<td>102</td>
</tr>
<tr>
<td>inventory program/Planning study for an organic constituents</td>
<td>715</td>
</tr>
<tr>
<td>ionizing radiation/Effects of high intensity visible and ultrav</td>
<td>88</td>
</tr>
<tr>
<td>ionosphere and stratosphere/Survival chances of microorganisms u</td>
<td>881</td>
</tr>
<tr>
<td>isolation garment after chemical impregnation/Evaluation of a NA</td>
<td>452</td>
</tr>
<tr>
<td>(isolators)Techniques for sterile insertion and repair of space</td>
<td>1188</td>
</tr>
<tr>
<td>Jovian atmosphere/Review of the possible existence of a</td>
<td>1130</td>
</tr>
<tr>
<td>Jovian atmosphere/Spacecraft component survivability during entr</td>
<td>1154</td>
</tr>
<tr>
<td>Jovian atmosphere/Terrestrial organisms survive in a simulated</td>
<td>648</td>
</tr>
<tr>
<td>(Jupiter)Flight path and mission strategies to satisfy outer pla</td>
<td>425</td>
</tr>
<tr>
<td>(Jupiter)Pioneer program. Pioneer F/G planetary quarantine plan</td>
<td>477</td>
</tr>
<tr>
<td>Jupiter/Upper atmosphere of</td>
<td>1094</td>
</tr>
<tr>
<td>Kapton and Teflon film at high temperatures/Dry heat resistance</td>
<td>145</td>
</tr>
<tr>
<td>kinetic analysis of spore inactivation in a composite heat and g</td>
<td>295</td>
</tr>
<tr>
<td>(kinetics)Effects of high intensity visible and ultraviolet ligh</td>
<td>188</td>
</tr>
<tr>
<td>(kinetics)Mathematics of microbial populations</td>
<td>872</td>
</tr>
<tr>
<td>Kinetics of disinfection</td>
<td>966</td>
</tr>
<tr>
<td>kinetics of thermal death of bacteria/The</td>
<td>786</td>
</tr>
<tr>
<td>(kinetics)Proper use of biological indicators in sterilization</td>
<td>128</td>
</tr>
</tbody>
</table>
liquid propulsion system/Sterilizable
liquid propulsion system/Sterilizable
liquid propulsion system/Sterilizable
liquid propulsion system/Sterilizable
liquid rocket engine combustion on the viability of microorganisms
liquid sterile insertion/Feasibility study of
liquids and gases/Evaluation of filters to sterilize
logarithmic extrapolation of microbial survivor curves for plane
lunar and planetary missions/Examination of engineering requirements
lunar and planetary research, 1960-1964/Bibliography of
lunar and planetary spacecraft/Decontamination and sterilization
lunar and planetary space vehicles/Sterilization of
(lunar environment)Survival of bacterial spores under some simul
(lunar missions)Systems analysis and clean room monitoring for p
(lunar missions)Systems analysis and clean room monitoring for p
lunar orbiters/Progressive biological monitoring on
(lunar)Planning study for an organic constituents inventory proj
lunar probes/Chances of retrieval of viable microorganisms depo
lunar programs information system using the CDC 217 remote conso
lunar programs/Interactive computer information system for plane
Lunar rough landing capsule development program
lunar spacecraft/Comparative levels of microbial contamination i
lunar space vehicles. Engineering examination/Sterilization of u
lunar surface conditions/Survival of bacterial spores under some
(lyophilization)Ecology and thermal inactivation of microbes in
(lyophilization)Ecology and thermal inactivation of microbes in

manual for planetary quarantine lunar programs information syste
manual for planetary spacecraft to be sterilized by heating. Pro
manual for the microbial burden prediction model/Study program o
Mariner-Mars 1969 planetary quarantine plan
(Mariner-Mars 1969)Services provided in support of the planetary
Mariner-Mars 1969 spacecraft/Dry heat resistance of bacterial sp
Mariner-Mars 1969 spacecraft/Relative frequency distribution of
(Mariner-Mars 1971)Implications of change in probability of micr
Mariner-Mars 1971 planetary quarantine plan
Mariner-Mars 1971 planetary quarantine plan
Mariner-Mars 1971 post-launch analysis of compliance with planet
Mariner-Mars 1971 prelaunch analysis of probability of planetary
Mariner 1964 mission/Study of the probability of depositing viab
(Mariner)Problems posed by the planet Venus
(Mariner)Relationship of planetary quarantine to biological sear
Mariner Venus '67 - prelaunch analysis of contamination probabil
Mariner Venus 1972 mission/Preliminary quarantine analysis of a
Mars and Venus/Atmospheres of
Mars and Venus/Exospheric temperatures on

145
Mars and Venus explorations/Spacecraft-sterilization issue may a
Mars atmosphere/Feasibility study of an experiment for determi
Mars' atmosphere - goal for the early missions/Defining
Mars atmospheric entry probe. Study of critical sterilization pr
Mars atmospheric entry/Study of the thermal kill of viable organ
(Mars)ATP assay of terrestrial soils - a test of an exobiologica
Mars/Biological losses and the quarantine policy for
Mars capsule/Determination of the terminal sterilization cycle f
(Mars)Capsule sterilization canister separation joint
(Mars)Capsule system advanced development sterilization program
Mars. Cold and aridity as constraints on the survival of terrest
Mars/Comparative evaluation of methods for the search for life o
(Mars)Conference on hazard of planetary contamination due to mic
(Mars)Contamination control and sterilization in space programs
Mars/Contamination of
(Mars)Cryobiologist's conjecture of planetary life
(Mars)Definition of requirements for advanced sterilizable compo
(Mars)Discussion of the planetary quarantine constraints. An int
Mars during the Mariner 1964 mission/Study of the probability of
(Mars)Efficiency of sterilants in terrestrial and extraterrestri
Mars-entry-capsule aeroshell environmental history/Ground simula
(Mars)Evaluation of current technology in attaining planetary qu
(Mars)Experimental study of sterile assembly techniques
(Mars)Experiment to determine the effects of solid and liquid ro
(Mars)Growth of bacteria in soils from Antarctic dry valleys
Mars/Implications of change in probability of microbial growth f
(Mars)Influence of a set of extremal factors on biologically act
Mars lander mission/Preliminary analysis of the radiation burden
Mars landing capsule sterilization container/Development of a ty
Mars landing capsule sterilization container/Development of a ty
Mars landing capsule sterilization container/Development of a ty
Mars landing capsule sterilization container/Development of a ty
Mars landing capsule sterilization container/Development of a ty
(Mars)Life in extraterrestrial environments
(Mars)Life in extraterrestrial environments
(Mars)Microbial contaminants in the interiors of spacecraft comp
(Mars)Microbial survival after simulated meteoroids impact
Mars/Microorganisms on
Mars/1973 Viking voyage to
Mars/Nomenclature of symbols relevant to the probability of cont
Mars orbiter/Planetary quarantine analysis for an unmanned
Mars/?/Panspermia revisited, or have we already contaminated
(Mars)Planetary microbiological contamination log
(Mars)Planetary quarantine and space vehicle sterilization
(Mars)Planetary quarantine plan Voyager project
Mars/Probability of biological contamination of
Mars/Probability of biological contamination of
Mars probe-lander/Comparative studies of conceptual design and q
Mars probe-lander. Sterilization/Comparative studies of conceptu
Mars probe-lander. Sterilization/Comparative studies of conceptu
Mars probes and capsules and a method of burden control/Biologic
(Mars)Procedures necessary for the prevention of planetary conta
(Mars)Quarantine document system operations manual
(Mars)Re-evaluation of planetary quarantine constraints
(Mars)Relationship of planetary quarantine to biological search
(Mars)Resistance of certain strains of microorganisms to ultravi
(Mars)Response of spore-forming vs. nonspore-forming bacteria to
(Mars)Soil studies - Desert microflora. Desert soil algae surviv
Mars/Spacecraft sterilization and contamination of
(Mars)Spacecraft sterilization by destructive heating
Mars/Spacecraft sterilization. Immaculate Voyager will visit
(Mars)Spacecraft sterilization - implications and suggestions
Mars spacecraft/Sterilization of
(Mars)Space environment
(Mars)Status review of technology developments for spacecraft st
(Mars)Sterile soil from Antarctica: organic analysis
(Mars)Sterilization of space vehicles: the problem of mutual con
(Mars)Sterilization procedures for planetary landers
(Mars)Study of the automated biological laboratory, project defi
(Mars)Study program on the development of mathematical model(s)
Mars/Surface environment and possible biology of
(Mars)Survival of Antarctic desert soil bacteria exposed to vari
Mars. Survival of terrestrial microorganisms in simulated Martia
Mars - where we stand today/Search for life on
Martian conditions/Bacteria under simulated
Martian conditions/Multiplication of certain soil microorganisms
Martian dust clouds/Effect of ultraviolet on the survival of bac
Martian environment. Germination and growth of bacterial spores
Martian environment/Microorganisms under simulated
Martian environment. Moisture and oxygen requirements for Bacill
Martian environment/Response of microorganisms to a simulated
Martian environment/Study of microorganisms under a simulated
Martian environment/Survival of microorganisms in a simulated
Martian environments/Biological contamination of Mars. Cold and
Martian environments/Probability of growth (P_g) of viable microo
Martian environments/Studies with microorganisms and plants unde
Martian lander/Estimation of microbial release probabilities fro
Martian quarantine risk model
Martian surface simulation facility for bacterial studies
Martians/Consideration for the
mated surface areas and encapsulated in solids of spacecraft har
mated surfaces and on exterior surfaces of various materials/Eff
mated surfaces/Dry heat resistance of B. subtilis var. niger spo
(mated surfaces)Ecology and thermal inactivation of microbes in
(mated surfaces)Ecology and thermal inactivation of microbes in
(mated surfaces)Ecology and thermal inactivation of microbes in

147
Sterilization of spacecraft
methyl bromide sterilization of very dry spore and staphylococca
methyl bromide vapor/Sterilization with
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
microbes in and on interplanetary space vehicle components/Ecolo
Microbes in the upper atmosphere and beyond
microbial aerosol chambers with Beta-propiolactone/Disinfection
Microbial analysis
Microbial burden prediction model
microbial burden prediction/Study program on the development of
microbial burden predictions. Technical Report/Study program on
microbial burden predictions. User's manual for the microbial bu
microbial burden predictions. Appendices/Study program on the de
microbial burden predictions. Appendices, addendum/Study program
microbial burden prediction. Revisions to Vol. VI User's manual
Microbial cell recovery from solid materials
Microbial contaminants in the interiors of spacecraft components
microbial contaminants on space hardware/Factors influencing det
Microbial contamination associated with the Apollo 6 spacecraft
Microbial contamination control after terminal sterilization
(microbial contamination)Control and sampling in sterile rooms
microbial contamination control/Clean room complex for
microbial contamination/Control of
microbial contamination detected in industrial clean rooms/Compa
Microbial contamination detected on the Apollo 9 spacecraft
microbial contamination/Die-off of
Microbial contamination/Environmental microbiology and the contr
microbial contamination from fractured solids/Release of
microbial contamination from Gemini space suit/Evaluation of lea
microbial contamination in a clean room during an eleven week te
Microbial contamination in a clean room when occupied by operati
Microbial contamination in clean rooms
microbial contamination in clean rooms used for the assembly and
Microbial contamination in conventional and laminar flow clean r
(microbial contamination)Industrial applications of laminar airf
microbial contamination inside balsa wood and explosive charges
microbial contamination inside cured solid propellant/Investigat
microbial contamination inside irradiated and heated electronic
microbial contamination levels among hospital operating rooms an
Microbial contamination obtained on surfaces exposed to room air
Microbial contamination of a surface by handling
microbial contamination of space hardware/Review of naturally
microbial contamination on flat surfaces/Effect of time and temp
microbial contamination on space hardware/Factors influencing th
microbial contamination on surfaces by chemical approaches/Detec
microbial contamination on surfaces by chemical approaches/Detec
microbial contamination on surfaces by chemical approaches/Detec
microbial contamination on surfaces by chemical approaches/Detec
microbial contamination on surfaces. Evaluation of leakage of mi
microbial contamination on surfaces. Evaluation of leakage of mi
microbial contamination on surfaces. Evaluation of leakage of mi
microbial contamination on surfaces/Services provided in support
microbial contamination on surfaces/Use of ultrasonic energy in
microbial contamination/Possibility of using hydrogen peroxide m
(microbial contamination)Progressive biological monitoring on lu
microbial contamination to which spacecraft components are subje
Microbial control in assembly areas needed for spacecraft steril
Microbial decontamination and sampling program for anchored inte
microbial dissemination and germicidal activity of ethylene oxide
microbial dissemination and germicidal activity of ethylene oxide
microbial dissemination and germicidal activity of ethylene oxide
microbial growth/Effect of reduced barometric pressure on water
microbial growth for Mars/Implications of change in probability
microbiologically incubation and gas composition/Antarctic dry valley so
microbiologically controlled environment/Standards for clean rooms and
microbial particles/Air filtration of
microbial populations/Mathematics of
Microbial profile of a vertical laminar airflow surgical theater
Microbial profile of laminar flow clean rooms
Microbial release from solids after simulated hard landings
microbial release from solids/Effects of aeolian erosion on
microbial release probabilities/Analysis of
microbial release probabilities from a Martian lander/Estimation

150
microbial release probabilities on spacecraft sterilization requ
Microbial resistance to ethylene oxide
Microbial resistance to ethylene oxide/Microbiological aspects o
microbial sampling problem/Model for the quantification of the q
microbial sampling requirements for Apollo modules/Determination
(microbial)Services provided in support of the planetary quarant
microbial shedding from humans/Reduction of
microbial spore destruction/Mathematical basis for a diffusion m
microbial spores and some considerations for the sterilization o
microbial spores under several temperature and humidity conditio
microbial spores under several temperature and humidity conditio
microbial spores under several temperature and humidity conditio
Microbial sterilization in ultra-high vacuum and outer space: ki
microbial surface sampling: Development and application/Method f
Microbial survival after simulated meteoroid impact
(microbial survival)Analytical techniques in planetary quarantin
Microbial survival in deep space environment
microbial survival in heat sterilization/Estimation of
microbial survival in heat sterilization/Log-normal model for
microbial survivor curves for planetary quarantine requirements/
microbial thermal inactivation/Instrument for study of
Microbiological aerosol stabilizers as substitutes for bound wat
microbiological aspects of the JPL sterilization assembly develo
microbiological assay and certification of spacecraft hardware s
Microbiological assay of space hardware
Microbiological barrier equipment and techniques
Microbiological barrier techniques
Microbiological barrier techniques
Microbiological burden on the surfaces of Explorer XXXIII spacec
Microbiological burden on the surfaces of the AIMP spacecraft
Microbiological burden on the surfaces of the AIMP spacecraft
Microbiological burden on the surfaces of the AIMP spacecraft
Microbiological burden on the surfaces of the AIMP spacecraft
Microbiological contamination control in spacecraft sterilizatio
microbiological contamination control: Needs and areas of appli
Microbiological contamination control. State of the art report
microbiological contamination in the interior of spacecraft comp
microbiological contamination log/Planetary
microbiological contamination/Statistical problems in the standa
microbiological environmental control/Recent advances in
microbiological evaluation of a large volume air incinerator
microbiological examination of space hardware: NASA's current ed
microbiological examination of space hardware/NASA standard proc
microbiological examination of space hardware/NASA standard proc
microbiological examination of space hardware/Standard procedure
microbiological filters for liquids and gases/Evaluation of
microbiological flora of the Gemini IX spacecraft before and aft
microbiological hazards in the laboratory/Control of
Microbiological investigation of selected spacecraft parts and m
microbiological laboratories/Use of ultraviolet radiation in
Microbiological methods of testing the atmosphere
Microbiological monitoring of spacecraft assembly facility opera
Microbiological monitoring of spacecraft assembly facility opera
Microbiological monitoring of spacecraft assembly facility opera
microbiological profiles of the Apollo 10 and 11 spacecraft/Quan
microbiological safety cabinet/Containment of microbial aerosols
microbiological safety to space research/Contributions of
Microbiological sampling of returned Surveyor III electrical cab
Microbiological sampling of surfaces
microbiological sampling of surfaces/Vacuum probe: new approach
microbiological shedding in clean rooms/Reduction of
microbiological sterilization problems/Research on
Microbiological studies conducted in a vertical laminar airflow
Microbiological studies conducted in the Experimental Assembly a
Microbiological studies on planetary quarantine
microbiological studies on the Apollo 10 and 11 spacecraft/Quali
Microbiological studies on the performance of a laminar airflow
Microbiological survey of environmentally controlled areas
Microbiological techniques for recovery from interiors of solids
microbiological techniques for recovery from surfaces/Survey of
Microbiological filters - liquid and gas
Microbiology and sterilization/Biostatistics and space explorati
Microbiology and sterilization/Biostatistics and space explorati
Microbiology and sterilization/Biostatistics and space explorati
Microbiology and sterilization/Biostatistics and space explorati
Microbiology and sterilization/Biostatistics and space explorati
Microbiology and sterilization/Biostatistics and space explorati
Microbiology and sterilization/Biostatistics and space explorati
Microbiology and the control of microbial contamination/Environm
microbiology as related to planetary quarantine/Assay methodolo
microbiology as related to planetary quarantine/Basic studies in
microbiology as related to planetary quarantine/Environmental
microbiology as related to planetary quarantine/Environmental
microbiology as related to planetary quarantine/Environmental
microbiology as related to planetary quarantine/Environmental
microbiology as related to planetary quarantine/Environmental
microbiology as related to planetary quarantine/Environmental
Microbiology of space probe sterilization
Microbiology quality activities for a planetary mission
microbiology/Research and development in environmental
microbiology sampling on surfaces: Agar spray/Improved technique
microbiology/Short courses on basic environmental
microbiology/Short courses on basic environmental
microbiology/Space age
(microbiology)Traditional concepts for contamination control
microbiology/Use of laminar airflow equipment in
(microbiotank)Reduction of microbial dissemination and germicida
microorganisms/Effect of ultrahigh vacuum on viability of 951
microorganisms/Effects of continuous and interrupted radiation o 91
(microorganisms)Effects of high intensity visible and ultraviolet 188
microorganisms/Effects of simulated space environments on the vi 1106
(microorganisms)Electrostatic deposition device to deposit monol 1267
(microorganisms)Environmental microbiology as related to planeta 88
(microorganisms)Environmental microbiology as related to planeta 885
(microorganisms)Environmental microbiology as related to planeta 886
(microorganisms)Environmental microbiology as related to planeta 887
(microorganisms)Environmental microbiology as related to planeta 888
(microorganisms)Environmental microbiology as related to planeta 889
(microorganisms)Ethylene oxide sterilization, current review of 637
(microorganisms)Ethylene oxide sterilization rates and protectiv 547
(microorganisms)Evaluation of a quantal response model with esti 228
(microorganisms)Evaluation of a quantal response model with vari 223
(microorganisms)Experimental heat chamber for sterilization of 103
(microorganisms)Experimental heat chamber for sterilization of 105
microorganisms/Experiment to determine the effects of solid and 846
microorganisms for counting/Vacuum probe for removing 795
microorganisms from solids after simulated hard landings/Release 850
microorganisms from solid materials/Release of 451
microorganisms from solids/Factors influencing the recovery of 968
microorganisms from surfaces by swabbing/Recovery of known numbe 280
microorganisms from surfaces/Factors influencing the recovery of 968
microorganisms from surfaces/Feasibility of using ultrasonics fo 969
microorganisms from surfaces/Improved sonication method for remo 861
(microorganisms)Gaseous disinfection 143
(microorganisms)Handbook of biological aspects of spacecraft ste 655
(microorganisms)Heat destruction patterns 890
(microorganisms)Improved model of the vacuum probe 796
microorganisms in a simulated Martian environment. Moisture and 474
microorganisms in a simulated Martian environment/Survival of 436
microorganisms in a simulated Martian environment/Survival of 474
microorganisms in desert soil exposed to five years of continuou 173
microorganisms in dry heat/Effect of various gas atmospheres on 897
microorganisms in extreme environments/Natural selection of 5
microorganisms in high ultraviolet flux/Survival of selected 747
microorganisms in Martian environments/Probability of growth (P 523
microorganisms in nitrogen gas/Enumeration of viable 149
microorganisms in simulated Martian environments/Biological cont 1082
microorganisms in simulated planetary environments/Biochemical a 158
microorganisms in simulated space/Study of viability of 1109
microorganisms in simulated space/Study of viability of 1110
Microorganisms in solid materials 738
microorganisms in space at orbital altitudes during Gemini satel 570
microorganisms in space. Further rocket and balloon borne exposu 569
microorganisms in space/Survival of 699
microorganisms in space/Survival of 703
(microorganisms)Integrated lethality of sterilization temperatur 239
Services provided in support of the planetary qu

Soil moisture, relative humidity, and microbial

Spacecraft component survivability during entry

Spacecraft sterilization by destructive heating

Spacecraft sterilization - implications and sugg

Spacecraft sterilization - the grand requirement

Spacecraft sterilization training manual

Status report on D, z and $A_w$ value investigation

Sterilization and storage compatibility study of

Sterilization assembly development laboratory fa

Sterilization of spacecraft

Stochastic sterilization model

Studies of spacecraft sterilization parameters

Study of aseptic maintenance by pressurization

Study of aseptic maintenance by pressurization

Study of the application of laminar flow ventila

Study of the factors influencing sterilization b

Systems analysis and clean monitoring for planet

Techniques for the limitation of biological load

Thermal death of Bacillus subtilis var. niger sp

Thermal destruction of

Thermal radiative characteristics of viable

microorganisms through small orifices/Study of the possible move

microorganisms to a simulated Martian environment/Response of

microorganisms to dry heat: Design of apparatus, operational pro

microorganisms to establish ecological niches in different soils

microorganisms to high vacuum/Resistance of

microorganisms to inactivation by dry heat/Resistivity of

156
Planning, evaluation, and analytical studies in planetary...
Probability of biological contamination of Mars...
Probability of biological contamination of Mars...
Simultaneous nonlinear estimation...
Spearman estimation for a simple exponential...
Stochastic approach to bioburden estimation and prediction...
Stochastic math...
Stochastic sterilization...
Systems analysis and clean room monitoring for planetary...
Systems analysis and clean room monitoring for planetary...
Systems analysis and clean room monitoring for planetary...
Terminal sterilization process calculation for spacecraft...
model with estimated concentrations/Evaluation of a quantal resp...
drying heat sterilization...
Techniques for the limitation of biologic...
models/Application of thermal...
models/Estimation of the parameters in exponential decontamination...
models for contamination and pollution prediction/Mathematical...
models for count data/Exponential decontamination...
model(s) for microbial burden predictions. Vol. I: Technical Rep...
model(s) for microbial burden predictions. Vol. II: User's manua...
model(s) for microbial burden predictions. Vol. III: Appendices...
model(s) for microbial burden predictions. Vol. V: Appendices, a...
model(s) for microbial burden predictions. Vol. VIII. Revisions...
model(s) for microbial burden predictions. Vol. X. Final report...
models of bioclean facilities are needed for spacecraft steriliz...
models/Simultaneous estimation by partial totals for compartment...
moisture and oxygen requirements for Bacillus cereus and Bacillus...
moisture content on the dry heat resistance of Bacillus subtilis...
moisture of the chamber/Ethylene oxide - Freon 12 decontaminatio...
motion on the sporicidal activity of Beta-propiolactone vapor...
motion on the thermal inactivation rate of bacterial spores/Ef...
motion/Sterilizing action of gaseous ethylene oxide. The effec...
(MOLSINK) JPL develops double vacuum chamber for spacecraft tests...
monitoring as an assay technique/Visual...
monitoring/Contamination analysis and...
development and test of flexible film coupon strips...
monitoring for planetary quarantine program/Systems analysis and...
monitoring for planetary quarantine program/Systems analysis and...
monitoring instruments open new doors for environmental understa...
monitoring of laminar downflow clean rooms...
Monitoring of sterile areas...
monitoring on lunar orbiters/Progressive biological...
monitoring system/Development of a faster...
monitoring system/Development of an increased sampling rate...
NASA biological isolation garment after chemical impregnation
NASA in relation to spacecraft sterilization/Role and responsibility
(NASA policies) Decontamination and sterilization of lunar and planetary equipment
NASA program scope and definition
NASA requirements for the sterilization of spacecraft
NASA/Services provided in support of the planetary quarantine requirement
NASA standard procedure/Effect of low numbers of microorganisms in nitrogen gas
(nomenclature) Value of agreed standards of sterility
non-contamination requirements/Multi-stage decision model for microbial contamination
nonparametric test statistics/Certain uncorrelated factors
nonspore-forming bacteria to diurnal freezing and thawing/Response to environmental change
nonthermal methods of decontamination and sterilization/Survey on earth and in space
orbiters/Progressive biological monitoring on lunar orbiters
Organic constituent inventory for planetary flight missions
organic constituents inventory program/Planning study for an outer planet mission
orifices/Study of the possible movement of microorganisms through orbiters
outer planet missions/Planetary quarantine consideration for (outer planets)
outer planet quarantine constraints/Flight path and mission strategy
(outer planets) Bibliography of lunar and planetary research, 1965-1974
oxygen requirements for Bacillus cereus and Bacillus subtilis spores

(panspermia) Meteorites and life
Panspermia revisited, or have we already contaminated Mars?
Paraformaldehyde for surface sterilization and detoxification
particulate aerosols by a sonic disseminator technique/Productivity
(particulate) Air filtration of microbial particles
(particulate) Bacterial penetration of Robbins BCO filter
(particulate) Bacterial response to the soil environment
(particulate) Clean room in space technology
(particulate) Contamination control: a very old, new field
(particulate) Contamination control handbook for ground fluid systems
(particulate contamination) Microbiological aspects of sterilization
particulate contamination/Microscopic method of degradation
particulate contamination/Monitoring airborne particulate contamination
(particulate) Degradation due to contaminants throughout the test
(particulate) Design of clean rooms. Classified list of selected particulate contamination
(particulate) Design requirements for laminar airflow clean rooms
(particulate) Designing for the laminar flow environment
(planetary landers) Recent developments in planetary quarantine 487
planetary landers/Sterilization procedures for 391
(planetary landers) Study of the biological cleanability of surfa 416
planetary landers/Cryobiologist's conjecture of 1061
Planetary microbiological contamination log 321
planetary missions/Examination of engineering requirements and p 590
Planetary quarantine analysis for an unmanned Mars orbiter 544
planetary quarantine/Analytical basis for 1075
planetary quarantine/Analytical techniques in 318
planetary quarantine and spacecraft sterilization/Planning, eval 322
planetary quarantine and spacecraft sterilization/Planning, eval 333
planetary quarantine and spacecraft sterilization/Planning, eval 334
Planetary quarantine and space vehicle sterilization 234
planetary quarantine. Assay methodology. Natural die-off of cont 1235
planetary quarantine, background of the sterilization requiremen 390
planetary quarantine/Basic studies in environmental microbiology 782
planetary quarantine/Computerized bacterial identification syste 276
Planetary quarantine consideration for outer planet missions 1139
Planetary quarantine constraints for advanced missions 424
planetary quarantine constraints. Introduction to the problems o 692
planetary quarantine constraints/Re-evaluation of 323
(planetary quarantine)Contamination control 192
planetary quarantine/Definition of requirements for advanced 208
(planetary quarantine)Detection of low levels of microbial conta 875
(planetary quarantine)Die-off of microbial contamination 1236
(planetary)Quarantine document system operations manual 337
planetary quarantine/Environmental microbiology as related to 86
planetary quarantine/Environmental microbiology as related to 87
planetary quarantine/Environmental microbiology as related to 88
planetary quarantine/Environmental microbiology as related to 783
planetary quarantine/Environmental microbiology as related to 886
planetary quarantine/Environmental microbiology as related to 887
planetary quarantine/Environmental microbiology as related to 888
(planetary quarantine)Estimation of microbial release probabilit 1077
planetary quarantine for lunar programs/Interactive computer inf 1007
planetary quarantine/Foundations of 492
planetary quarantine lunar information system/User's manual for 1008
planetary quarantine lunar programs information system using the 1296
planetary quarantine/Microbiological studies on 656
(planetary quarantine)Multi-stage decision model for mission non 1182
planetary quarantine plan/Mariner-Mars 1969 1083
planetary quarantine plan/Mariner-Mars 1971 539
planetary quarantine plan/Mariner-Mars 1971 540
planetary quarantine plan/Pioneer program. Pioneer F/G 477
Planetary quarantine plan Voyager project 603
Planetary quarantine plan Voyager project 1159
Planetary quarantine: principles, methods and problems 486
(planetary quarantine)Provisions for unmanned planetary missions 811

161
planetary quarantine/Recent developments in 487
planetary quarantine: Recontamination phase 306
planetary quarantine requirements/Analysis of 1074
planetary quarantine requirements for spacecraft sterilization 261
planetary quarantine requirements/Logarithmic extrapolation of m 118
planetary quarantine requirements/Mariner-Mars 1971 post-launch 541
planetary quarantine requirements of NASA; germicidal activity of 819
planetary quarantine requirements of NASA. Reduction of bacteria 199
planetary quarantine requirements of NASA. Reduction of bacteria 200
planetary quarantine requirements of NASA. Reduction of bacteria 201
planetary quarantine requirements of NASA. Reduction of bacteria 202
planetary quarantine requirements of NASA. Reduction of bacteria 203
planetary quarantine requirements of NASA. Reduction of bacteria 204
planetary quarantine requirements of NASA. Reduction of bacteria 816
planetary quarantine requirements of NASA. Reduction of bacteria 817
planetary quarantine requirements of NASA/Services provided in s 198
planetary quarantine requirements of NASA/Services provided in s 353
planetary quarantine requirements of NASA/Services provided in s 354
planetary quarantine requirements of NASA/Services provided in s 355
planetary quarantine requirements of NASA/Services provided in s 356
planetary quarantine requirements of NASA/Services provided in s 357
planetary quarantine requirements of NASA/Services provided in s 358
planetary quarantine requirements of NASA/Services provided in s 359
planetary quarantine requirements of NASA/Services provided in s 360
planetary quarantine requirements of NASA/Services provided in s 361
planetary quarantine requirements of NASA/Services provided in s 362
planetary quarantine requirements of NASA/Services provided in s 363
planetary quarantine requirements of NASA/Services provided in s 364
planetary quarantine requirements of NASA/Services provided in s 365
planetary quarantine requirements of NASA/Services provided in s 366
planetary quarantine requirements of NASA/Services provided in s 367
planetary quarantine requirements of NASA/Services provided in s 368
planetary quarantine requirements of NASA/Services provided in s 369
planetary quarantine requirements of NASA/Services provided in s 370
planetary quarantine requirements of NASA/Services provided in s 974
planetary quarantine requirements of NASA/Services provided in s 1215
planetary quarantine requirements of NASA/Services provided in s 1216
planetary quarantine requirements of NASA/Services provided in s 1217
planetary quarantine requirements of NASA/Services provided in s 1218
planetary quarantine requirements of NASA/Services provided in s 1219
planetary quarantine requirements of NASA/Services provided in s 1220
planetary quarantine requirements/Planning, evaluation and analy 51
planetary quarantine requirements/Planning, evaluation and analy 52
planetary quarantine requirements/Planning, evaluation and analy 53
planetary quarantine/Scientific publications and presentations r 97
planetary quarantine/Scientific publications and presentations r 98
planetary quarantine/Scientific publications and presentations r 99
planetary quarantine/Spacecraft sterilization and 75
(planetary quarantine)Space hardware assay methodology 1245
(planetary quarantine)Sterilization and quarantine parameters fo 236
(probe) Services provided in support of the planetary quarantine
probes/Probability of planetary contamination by space
(probes) Sterilization and decontamination techniques for space v
probes/Sterilizing space
probe sterilization/Microbiology of space
probe sterilization/Space
probe. Study of critical sterilization problems on a Mars atmosp
probe surface sampler/Microbiological evaluation of the vacuum
(probe vehicle) Feasibility study of an experiment for determinin
problems in spacecraft sterilization/Special
problems in sterilization of spacecraft/Engineering
(procedure) Apollo and contamination control. McDonnell Douglas'
(procedure) Evaluation of a quantal response model with variable
(procedure) Implication of a chemical contaminant inventory for 1
(procedure) Integrated lethality of sterilization temperature pro
procedures for microbiological examination of space hardware/NAS
procedures for planetary spacecraft which are to be sterilized b
procedures/Laminar air flow for sterility testing
procedures/Sampling and verification in large-scale sterilizatio
program on the development of a mathematical model(s) for micro
program on the development of a mathematical model(s) for micro
program on the development of a mathematical model(s) for micro
program/Planning study for an organic constituents inventory
program scope and definition/NASA
programs information system using the CDC 217 remote console/Use
(propellants) Microbial cell recovery from solid materials
(propylene oxide) Synergistic effects in sonochemical sterilizati
(protection) Development of a laminar airflow biological cabinet
protein denaturation during exposure to sterilization temperatur

Quantitative aspects of shedding of microorganisms by humans
quarantine analysis of a possible Mariner Venus 1972 mission/Prel
quarantine and space vehicle sterilization/Planetary
quarantine constraints/Flight path and mission strategies to sat
quarantine/Environmental microbiology as related to planetary
quarantine/Environmental microbiology as related to planetary
quarantine for lunar programs/Interactive computer information s
quarantine lunar programs information system using the CDC 217 r
quarantine parameters for consideration during the design of pla
quarantine policy for Mars/Biological losses and the
quarantine program/Systems analysis and clean room monitoring fo
quarantine program/Systems analysis and clean room monitoring fo
quarantine program/Systems analysis and clean room monitoring fo
quarantine/Recent developments in planetary
quarantine requirements/Analysis of planetary
quarantine requirements/Logarithmic extrapolation of microbial s
radioisotope tracer techniques/Study of the biological cleanability of waste radioisotope tracers - 21mN under a class of local alternatives/Methodology of the development of a typical Ma
(recontamination) Continuation of the development of a typical Ma
(recontamination) Continuation of the development of a typical Ma
recontamination hazards/Comments of the in-flight
(recontamination) Objectives and technology of spacecraft sterilization
(recontamination) Recontamination of spacecraft and the probability of contaminati
Recontamination phase/Planetary quarantine:
(recontamination) Spacecraft sterilization - New engineering and
recontamination studies/Post-launch study
recovery from interiors of solids/Microbiological techniques for
recovery from solid materials/Microbial cell
recovery from surfaces/Survey of microbiological techniques for
recovery of microorganisms from solids/Factors influencing the
recovery of viable microorganisms from surfaces/Factors influencing
(relative humidity) Adsorption of formaldehyde by various surface
(relative humidity) Relative humidity and microbial abundance in dry valleys of Sout
(relative humidity) Automatic ethylene oxide decontamination system
(relative humidity) Beta-propiolactone vapor as a disinfectant
(relative humidity) Relative humidity; developing dry heat D-values/Dry heat destruc
(relative humidity) Development of parametric data for the establ
(relative humidity) Dry heat destruction rates of microorganisms o
(relative humidity) Dry heat destruction rates of microorganisms
(relative humidity) Dry heat on gaseous chemical resistance of Ba
(relative humidity) Effect of bacterial cell moisture on the spor
(relative humidity) Effect of cell moisture on the thermal inacti
(relative humidity) Effects of A_w on the sporocidal activity of a
(relative humidity) Encapsulation, electronics, eccofoam
(relative humidity) Environmental microbiology as related to plan
(relative humidity) Heat destruction patterns
(relative humidity) Kinetics of disinfection
(relative humidity) Microbiological aspects of ethylene oxide st
(relative humidity) Microbiological aspects of ethylene oxide ste
(relative humidity) Microorganisms removed from contaminated sta
(relative humidity) Relative humidity on small particle adhesion to surfaces/Study o
(relative humidity) Relative humidity on the penetrability and sporocidal activity o
(relative humidity) Resistivity of microorganisms to inactivation
(relative humidity) Resistivity of microorganisms to thermal inac
(relative humidity) Sporicidal effect of peracetic acid vapor
(relative humidity) Sterilization of interplanetary spacecraft
(relative humidity) Sterilization of spacecraft
(relative humidity) Sterilization with methyl bromide vapor
(relative humidity) Sterilizing techniques with ethylene oxide
(relative humidity) Studies for sterilization of space probe comp
(relative humidity) Studies on ethylene oxide - Freon 12 decontam
(relative humidity) Thermal destruction of microorganisms
(relative humidity) Types of biological indicators used in monito
(relative humidity) Virucidal activity of Beta-propiolactone vapo

167
Viruses respond to environmental exposure requirements/Basis for the sterility requirements/Analysis of planetary quarantine requirements/Effect of microbial release probabilities on spacecraft requirements (Engineering guidelines for clean assembly and sterilization requirements for Apollo modules/The determination of quantitative requirements for \textit{B. cereus} and \textit{B. subtilis} germination/Survival requirements for space exploration/Sterilization requirements for the sterilization of spacecraft/NASA requirements/Logarithmic extrapolation of microbial survivor curve requirements manual for planetary spacecraft to be sterilized by requirements/Mariner-Mars 1971 post-launch analysis of compliance requirements/Model for planetary quarantine requirements/Multi-stage decision model for mission non-contamination requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements of NASA/Services provided in support of the planetary requirements/Potential effects of recent findings on spacecraft sterilization requirements/Rational model for spacecraft sterilization requirements/Sampling of planetary surface solids for unmanned \textit{i} requirements/Spacecraft sterilization requirements/Spacecraft sterilization and planetary quarantine requirements/Spacecraft sterilization - the grand special problem (requirements)Special problem of encapsulated contaminants (requirements)Stochastic sterilization model requirements/Study of analytical techniques in planetary quarantine resins/Use of sporicides and heat to sterilize (resistance)Absorption-desorption of water by bacterial spores a resistance and activation of spores of \textit{Clostridium welchii}/Heat (resistance)Biological and physical factors in dry heat sterilization
Ecology and thermal inactivation of microbes in and around Mars.

Effect of a simulated Martian environment on certain microorganisms.

Environmental microbiology as related to planetary quarantine and sterilization.

Resistance of Bacillus subtilis var. niger spores to dry heat and gamma radiation.

Stochastic sterilization model.

Biological indicators used in monitoring sterilization procedures.

Types of biological indicators used in monitoring sterilization procedures.

Resistance to ethylene oxide and gamma radiation.

Thermal death of Bacillus subtilis spores.

Thermal destruction of microorganisms.

Types of biological indicators used in monitoring sterilization procedures.

Biological indicators used in monitoring sterilization procedures.

Microbiological aspects of sterilization assembly development.

Quality assurance monitoring of microbiological aspects of sterilization assembly development.

Sterilization Assembly Development Laboratory (SADL) facility.

Biological monitoring of capsule mechanical training model.

Effect of environment on biological burden during spacecraft contamination.

Sterilization assembly and development laboratory.

Microbiological cleanliness at JPL's EASL and SADL facility.

Microbiological aspects of sterilization assembly development.

Quality assurance monitoring of microbiological aspects of sterilization assembly development.

Test and operations summary and microbiological aspects of sterilization assembly development.

Sampler/Novel multi-slit large volume air sampler.

Techniques for the limitation of biological loading of the vacuum probe surface.

Sample assayed by the NASA standard procedure.

Asymptotic efficiency of two nonparametric competitors.

Analysis of methods for growth detection in the search for extraterrestrial life.
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical basis for assaying buried biological contamination</td>
<td>644</td>
</tr>
<tr>
<td>Sampling and verification in large-scale sterilization procedure</td>
<td>126</td>
</tr>
<tr>
<td>Approach to computerized bacterial identification</td>
<td>275</td>
</tr>
<tr>
<td>Approximations to the Bayes estimate for a quantal assay</td>
<td>882</td>
</tr>
<tr>
<td>Bayesian analysis for an exponential surveillance model</td>
<td>883</td>
</tr>
<tr>
<td>Biodetection grinder</td>
<td>877</td>
</tr>
<tr>
<td>Biostatistics and space exploration: microbiology and</td>
<td>219</td>
</tr>
<tr>
<td>Comparative evaluation of methods for the search for</td>
<td>576</td>
</tr>
<tr>
<td>Computerized bacterial identification system as applicable</td>
<td>276</td>
</tr>
<tr>
<td>Decontamination of enclosed spaces with Beta-propiolactone</td>
<td>135</td>
</tr>
<tr>
<td>Sampling: Development and application/Method for microbial surface</td>
<td>630</td>
</tr>
<tr>
<td>Sampling device/Development of an ultrasonic/vacuum</td>
<td>189</td>
</tr>
<tr>
<td>Distribution-free test for parallelism</td>
<td>1085</td>
</tr>
<tr>
<td>Ethylene oxide - Freon 12 decontamination procedure B.</td>
<td>620</td>
</tr>
<tr>
<td>Evaluation of filters to sterilize liquids and gases</td>
<td>307</td>
</tr>
<tr>
<td>Improved method for pouring Rodac plates</td>
<td>146</td>
</tr>
<tr>
<td>Improved model of the vacuum probe</td>
<td>796</td>
</tr>
<tr>
<td>Improved sonication method for removal of microorganisms</td>
<td>861</td>
</tr>
<tr>
<td>Sampling in sterile rooms/Control and</td>
<td>1158</td>
</tr>
<tr>
<td>Laboratory for monitoring bacterial contamination of surface</td>
<td>1213</td>
</tr>
<tr>
<td>Life in the clouds</td>
<td>35</td>
</tr>
<tr>
<td>Microbial contamination detected on the Apollo 9 spacecraft</td>
<td>972</td>
</tr>
<tr>
<td>Microbiological analysis of snow and ice from the Antarctic</td>
<td>662</td>
</tr>
<tr>
<td>Microbiological barrier techniques</td>
<td>910</td>
</tr>
<tr>
<td>Microbiological flora of the Gemini IX spacecraft before</td>
<td>568</td>
</tr>
<tr>
<td>Microbiological investigation of selected spacecraft and</td>
<td>50</td>
</tr>
<tr>
<td>Microbiological methods of testing the atmosphere</td>
<td>1233</td>
</tr>
<tr>
<td>Microbiological survey of environmentally controlled area</td>
<td>869</td>
</tr>
<tr>
<td>Microbiology of surgery suites</td>
<td>1208</td>
</tr>
<tr>
<td>Microbiology quality activities for a planetary mission</td>
<td>195</td>
</tr>
<tr>
<td>Model for the quantification of the qualitative microbe</td>
<td>1003</td>
</tr>
<tr>
<td>Monitoring airborne particulate contamination</td>
<td>688</td>
</tr>
<tr>
<td>NASA standard procedures for the microbiological examination</td>
<td>806</td>
</tr>
<tr>
<td>Sampling of planetary surface solids for unmanned <em>in situ</em> geology</td>
<td>802</td>
</tr>
<tr>
<td>Sampling of surfaces/Microbiological</td>
<td>380</td>
</tr>
<tr>
<td>Sampling of surfaces/Vacuum probe; new approach to the microbiology</td>
<td>1280</td>
</tr>
<tr>
<td>Sampling on surfaces: Agar spray/Improved technique for microbio</td>
<td>862</td>
</tr>
<tr>
<td>Sampling program for anchored interplanetary monitoring platform</td>
<td>678</td>
</tr>
<tr>
<td>Quality assurance requirements manual for planetary spacecraft</td>
<td>755</td>
</tr>
<tr>
<td>Sampling rate monitoring system/Development of an increased</td>
<td>1274</td>
</tr>
<tr>
<td>Reduction of microbial dissemination and germicidal activity</td>
<td>820</td>
</tr>
<tr>
<td>Reduction of microbial dissemination and germicidal activity</td>
<td>821</td>
</tr>
<tr>
<td>Reduction of microbial shedding from humans</td>
<td>1001</td>
</tr>
<tr>
<td>Sampling requirements for Apollo modules/Determination of quantity</td>
<td>1002</td>
</tr>
<tr>
<td>Research on microbiological sterilization problems</td>
<td>197</td>
</tr>
<tr>
<td>Soil microbial and ecological investigations in the Antarctic</td>
<td>170</td>
</tr>
<tr>
<td>Soil moisture, relative humidity and microbial abundance</td>
<td>169</td>
</tr>
<tr>
<td>Spacecraft monitoring method and procedures</td>
<td>1170</td>
</tr>
</tbody>
</table>
Sterilization with ethylene oxide gas mixtures
Stochastic approach to bioburden estimation and prediction
Study of contamination sensors
Study program on the development of mathematical models
Sampling surfaces for microbiological contamination/Statistical
Systems analysis and clean room monitoring for planetary
sampling systems
Microbiological exploration of the stratosphere
Sampling technique/Development and test of flexible film coupon
Sampling with an agar spray technique/Surface
Sensitivity of bacteriological detection techniques to low level
shedding by human beings/Microorganism
Shedding in clean rooms/Reduction of microbiological
shedding of microorganisms by humans/Quantitative aspects of
simulated extraterrestrial space ecology/Exposure of microorganisms
simulated hard landings/Microbial release from solids after
simulated hard landings/Release of microorganisms from solids after
simulated Jupiter atmosphere/Terrestrial organisms survive in
simulated lunar surface conditions/Survival of bacterial spores
simulated Martian conditions/Bacteria under
simulated Martian conditions/Multiplication of certain soil microorganisms
simulated Martian dust clouds/Effect of ultraviolet on the survival
simulated Martian environment. Germination and growth of bacteria
simulated Martian environment/Microorganisms under
simulated Martian environment. Moisture and oxygen requirements
simulated Martian environment/Response of microorganisms to a
simulated Martian environments/Biological contamination of Mars
simulated Martian environments/Biological contamination of Mars
simulated Martian environments/Studies with microorganisms and parameters
simulated Martian environment/Study of microorganisms under a
simulated Martian environment/Survival of microorganisms in a
simulated meteoroid impact/Microbial survival after
simulated planetary environments/Biochemical activities of terrestrial
simulated space conditions. Survival of microorganisms under
simulated space environments on the viability of microorganisms
simulated space/Study of viability of microorganisms in
simulated space/Study of viability of microorganisms in
simulated space vacuum on bacterial cells/Effects of
simulated space vehicle components/Dry heat destruction of spores
simulated Venus atmosphere on polymeric materials/Effects of
(simulation) Analytical basis for planetary quarantine
(simulation) Atmospheric contaminants in spacecraft
(simulation) ATP assay of terrestrial soils - a test of an exobiotic
(simulation) Bacterial growth in agar subjected to freezing and thawing
(simulation) Behavior of certain soil microorganisms in the 'arti
(simulation) Biological losses and the quarantine policy for Mars
(simulation) Biostatistics and space exploration: Microbiology and extraterrestrial
(simulation) Biostatistics and space exploration: Microbiology and extraterrestrial
(simulation) Biostatistics and space exploration: Microbiology and extraterrestrial
Biostatistics and space exploration: Microbiology and space exploration: Microbiology and space exploration: Microbiology and space exploration: Microbiology
Comparative evaluation for the search for life on Mars
Comparison of two model-discrimination criteria
Continuation of the development of a typical Mars landing site
Continuation of the development of a typical Mars landing site
Determination of quantitative microbial sampling requirements
Development and application of a system model for spores
Estimation of microbial survival in heat sterilization
Exospheric temperatures on Mars and Venus
Experimental heat chamber for sterilization of large simulation facility for bacterial studies/Martian surface
Growth of bacteria in soils from Antarctic dry valleys
Hypothetical Martian biosphere
Influence of a set of extremal factors on biological investigations into a diffusion model of dry heat sterilization
Kinetic analysis of spore inactivation in a composite
Kinetics of disinfection
Life in extraterrestrial environments
Limiting distribution of the likelihood ratio statistic
Mariner-Mars 1971 prelaunch analysis of probability
Martian environment on certain enzymes/Effect of a Martian quarantine risk model
Mathematical model of the effect of a predator on spores
Mathematical models for contamination and pollution
Microbial burden prediction model
Model for the quantification of the qualitative microbial burden
Simulation of a Mars-entry-capsule aeroshell environmental history
Simulation of the Venus atmosphere
Optimization of oven-heating profiles in spacecraft
Pioneer program. Pioneer F/G planetary quarantine procedures
Planetary quarantine constraints for advanced missions
Potential effects of recent findings on spacecraft survival
Role of soil science in space exploration
Simultaneous estimation by partial totals for comparison
Spacecraft monitoring method and procedures
Spearman simultaneous estimation for a compartmental model
Stochastic model describing bacterial aerosol concentration
Study of the possible movement of microorganisms through the thermal kill of viable organisms during development of a mathematical model
Study program on the development of a mathematical model
Study program on the development of a mathematical model
Study program on the development of a mathematical model
Study program on the development of a mathematical model
Survival of Antarctic desert soil bacteria exposed to extreme conditions
Technology feasibility spacecraft thermal math model
Technology feasibility spacecraft thermal math model
soil algal crusts: scanning electron and optical microscope stud
soil bacteria exposed to various temperature and to three years
(soil) Characterization of bacterial populations by means of fact
(soil) Desert microflora
(soil) Dry heat destruction rates of microorganisms on surfaces
(soil) Dry heat inactivation kinetics of naturally occurring spor
soil environment/Bacterial response to the
soil exposed to five years of continuous very high vacuum/Surviv
soil from Antarctica: organic analysis/Sterile
(soil) Life in extraterrestrial environments
(soil) Life in extraterrestrial environments
Soil microbial and ecological investigations in the Antarctic in
soil microbial incubation and gas composition/Antarctic dry vall
(soil) Microbiological analysis of snow and ice from the Antarcti
soil microorganisms in the "artificial Mars" chamber/Behavior of
(soil) Microorganism study: bacterial isolants from harsh environ
soil microorganisms under simulated Martian conditions/Multiplic
soil mineral particles/Dry heat survival of Bacillus subtilis va
soil moisture, relative humidity and microbial abundance in dry
soil of desert regions/Abundance of microflora in
soil organisms/Combined effects of ultrahigh vacuum and temperat
soils and environments/Ability of microorganisms to establish ec
soil science in space exploration/Role of
(soil) Services provided in support of the planetary quarantine r
(soil) Services provided in support of the planetary quarantine r
(soil) Services provided in support of the planetary quarantine r
soils from Antarctic dry valleys/Growth of bacteria in
(soil) Study of the dry heat resistance of naturally occurring or
(soil) Systematic description of bacterial isolants from rigorous
sonic and ultrasonic waves/Sterilizing effects of high intensity
sonication method for removal of microorganisms from surfaces/An
sonic disseminator technique/Production of low concentration par
sono-chemical approach in sterilization problems/An investigatio
sono-chemical approach in sterilization problems/An investigatio
sono-chemical approach in sterilization problems/An investigatio
sono-chemical approach in sterilization problems/An investigatio
sono-chemical approach in sterilization problems/An investigatio
sono-chemical sterilization/Synergistic effects in
Space age microbiology
space: a kinetic comparison/Microbial sterilization in ultra-hig
space at orbital altitudes during Gemini satellite experiments/S
space/Biological effectiveness of solar electromagnetic radiatio
space biology/Gnotobiotics in relation to
(space capsule) Determination of quantitative microbial sampling
(space capsule) Microbiological flora of the Gemini IX spacecraft
(space capsule) Voyager effort focused on sterilization
space components/Laboratory for monitoring bacterial contaminat1
space conditions/Survival of microorganisms under simulated

173
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of microbial release probabilities</td>
<td>325</td>
</tr>
<tr>
<td>Analytical basis for assaying buried biological contamination</td>
<td>644</td>
</tr>
<tr>
<td>Apollo and contamination control. McDonnel Douglas'</td>
<td>668</td>
</tr>
<tr>
<td>Apollo and contamination control. NASA's role</td>
<td>1223</td>
</tr>
<tr>
<td>Application of bench tests in development of heat sterilization</td>
<td>1249</td>
</tr>
<tr>
<td>Approach to computerized bacterial identification</td>
<td>275</td>
</tr>
<tr>
<td>Ability of microorganisms to establish</td>
<td>470</td>
</tr>
<tr>
<td>spacecraft assemblyCompatibility of sterilization and contamination</td>
<td>734</td>
</tr>
<tr>
<td>spacecraft assembly/Effect of environment on biological burden</td>
<td>1164</td>
</tr>
<tr>
<td>spacecraft assembly facility operations/Microbiological monitori</td>
<td>190</td>
</tr>
<tr>
<td>spacecraft assembly facility operations/Microbiological monitori</td>
<td>191</td>
</tr>
<tr>
<td>spacecraft assembly facility operations/Microbiological monitori</td>
<td>1166</td>
</tr>
<tr>
<td>spacecraft Assembly sterilizer-facility for the sterilization</td>
<td>240</td>
</tr>
<tr>
<td>spacecraft/Atmospheric contaminants in</td>
<td>803</td>
</tr>
<tr>
<td>spacecraft/Bacteriology of clean rooms</td>
<td>776</td>
</tr>
<tr>
<td>spacecraft: Basic policy relating to lunar and planetary contami</td>
<td>810</td>
</tr>
<tr>
<td>spacecraft before and after flight/Microbiological flora of the</td>
<td>568</td>
</tr>
<tr>
<td>spacecraft before sterilization/Techniques for the limitation of</td>
<td>730</td>
</tr>
<tr>
<td>spacecraft/Biological losses and the quarantine policy for Mars</td>
<td>1140</td>
</tr>
<tr>
<td>spacecraft/Biostatistics and space exploration: Microbiology an</td>
<td>216</td>
</tr>
<tr>
<td>spacecraft/Biostatistics and space exploration: Microbiology an</td>
<td>218</td>
</tr>
<tr>
<td>spacecraft/Capsule system advanced development sterilization pr</td>
<td>538</td>
</tr>
<tr>
<td>spacecraft/Chances of retrieval of viable microorganisms deposi</td>
<td>1178</td>
</tr>
<tr>
<td>spacecraft/Clean assembly and sterilization laboratory</td>
<td>206</td>
</tr>
<tr>
<td>spacecraft/Clean room complex for microbial contamination contr</td>
<td>1086</td>
</tr>
<tr>
<td>spacecraft/Clean room facilities for assembly, Explorer XXXV</td>
<td>237</td>
</tr>
<tr>
<td>spacecraft/Clean room in space technology</td>
<td>673</td>
</tr>
<tr>
<td>spacecraft/Clean room technology</td>
<td>793</td>
</tr>
<tr>
<td>spacecraft/Comparative levels of microbial contamination in clea</td>
<td>1222</td>
</tr>
<tr>
<td>spacecraft/Compatibility of Centaur/Surveyor materials with Fre</td>
<td>1189</td>
</tr>
<tr>
<td>Spacecraft component survivability during entry into the Jovian</td>
<td>1298</td>
</tr>
<tr>
<td>spacecraft components are subjected during manufacture/Detection</td>
<td>1154</td>
</tr>
<tr>
<td>spacecraft components/Conference on hazard of planetary contamin</td>
<td>378</td>
</tr>
<tr>
<td>spacecraft components/Effect of current cleaning procedures on s</td>
<td>1133</td>
</tr>
<tr>
<td>spacecraft components/Effect of current cleaning procedures on s</td>
<td>754</td>
</tr>
<tr>
<td>spacecraft components/Microbial contaminants in the interiors of</td>
<td>1147</td>
</tr>
<tr>
<td>spacecraft components/Microbial contaminants in the interiors of</td>
<td>855</td>
</tr>
<tr>
<td>spacecraft components/Microscopic method of particulate contami</td>
<td>977</td>
</tr>
<tr>
<td>spacecraft components/Progressive biological monitoring on luna</td>
<td>849</td>
</tr>
<tr>
<td>spacecraft components/Research on microbiological sterilization</td>
<td>197</td>
</tr>
<tr>
<td>spacecraft components/Thermal death studies on microbial spores</td>
<td>654</td>
</tr>
<tr>
<td>Spacecraft components survivability during entry into the Martia</td>
<td>1155</td>
</tr>
<tr>
<td>spacecraft/Conceptual design study of a terminal sterilization</td>
<td>46</td>
</tr>
<tr>
<td>spacecraft containing a radioisotope thermoelectric generator/Co</td>
<td>779</td>
</tr>
<tr>
<td>spacecraft/Contamination control and sterilization in space pro</td>
<td>823</td>
</tr>
<tr>
<td>spacecraft/Contamination control handbook</td>
<td>437</td>
</tr>
<tr>
<td>spacecraft/Contamination of Mars</td>
<td>1030</td>
</tr>
</tbody>
</table>
Immediate and future challenges to contamination control
Implementation of a chemical contaminant inventory for spacecraft
Implications of change in probability of microbial growth
Importance of sterilization techniques in spacecraft
Inertial sensor sterilization
Integrated lethality of sterilization temperature profile
Interactions between radiation fields from RTGs and spacecraft
Interactive computer information system for planetary quarantine
Investigation of methods for the sterilization of planetary materials
Investigation of the reliability of sterile insertion
Laboratory for monitoring bacterial contamination of spacecraft
Life in extraterrestrial environments
Logarithmic extrapolation of microbial survivor curves
Mariner Mars 1969 planetary quarantine plan
Martian quarantine risk model
Martian scene
Materials that support microorganism growth/Investigation
Mathematical basis for a diffusion model of microbial growth
Mathematical models for contamination and pollution
Mechanical sterile insertion system: Quality assurance
Microbial contamination control after terminal sterilization
Microbial contamination detected on the Apollo 9 spacecraft
Microbial contamination in a clean room when occupied
Microbial contamination in clean rooms
Microbial decontamination and sampling program for an spacecraft
Microbiological burden on the surfaces of Explorer XX spacecraft
Microbiological burden on the surfaces of the AIMP spacecraft
Microbiological burden on the surfaces of the AIMP spacecraft
Microbiological studies conducted in the Experimental Laboratory
Microbiology quality activities for a planetary mission
Microorganisms on Mars
Model Assembly Sterilizer for Testing (MAST)
Model for the quantification of the qualitative microbial constituents
Modern methods and means of sterilization of spacecraft
Spacecraft monitoring method and procedures
Multi-stage decision model for mission non-contamination
Spacecraft/NASA requirements for the sterilization of spacecraft
NASA standard procedures for the microbiological examination
National Aeronautics and Space Administration position
New approaches to contaminant control in spacecraft
1973 Viking voyage to Mars
Observations regarding factors important in dry heat sterilization
Operations problem of sterilization
Organic constituent inventory for planetary flight missions
Outbound lunar biological contamination control: Exploration
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spacecraft parts and materials/Microbiological investigation of</td>
<td>50</td>
</tr>
<tr>
<td>(spacecraft)Planetary quarantine: principles, methods and proced</td>
<td>486</td>
</tr>
<tr>
<td>(spacecraft)Planetary quarantine progress</td>
<td>824</td>
</tr>
<tr>
<td>(spacecraft)Planetary quarantine provisions for unmanned planet</td>
<td>811</td>
</tr>
<tr>
<td>Spacecraft polymeric material interactions during decontamination</td>
<td>1016</td>
</tr>
<tr>
<td>spacecraft polymeric materials/Effect of decontamination and ste</td>
<td>679</td>
</tr>
<tr>
<td>spacecraft polymeric materials/Sterilization and thermal-vacuum</td>
<td>1017</td>
</tr>
<tr>
<td>spacecraft polymeric products/Effects of decontamination steril</td>
<td>1015</td>
</tr>
<tr>
<td>spacecraft/Polymers for use in sterilized</td>
<td>658</td>
</tr>
<tr>
<td>Spacecraft preparation and sterilization as state of the art</td>
<td>44</td>
</tr>
<tr>
<td>spacecraft]/Principles, methods and problems [methods and means</td>
<td>1230</td>
</tr>
<tr>
<td>(spacecraft)Problems in sterilization of unmanned space vehicles</td>
<td>591</td>
</tr>
<tr>
<td>(spacecraft)Procedures for the microbiological examination of sp</td>
<td>352</td>
</tr>
<tr>
<td>(spacecraft)Progressive biological monitoring on lunar orbiters</td>
<td>849</td>
</tr>
<tr>
<td>spacecraft (Project Zip)/Noncontaminating separation systems for</td>
<td>669</td>
</tr>
<tr>
<td>(spacecraft)Quality assurance monitoring of microbiological aspe</td>
<td>413</td>
</tr>
<tr>
<td>spacecraft/Quantitative and qualitative microbiological profiles</td>
<td>973</td>
</tr>
<tr>
<td>(spacecraft)Recent developments in planetary quarantine</td>
<td>487</td>
</tr>
<tr>
<td>spacecraft/Relative frequency distribution of D125C values for</td>
<td>90</td>
</tr>
<tr>
<td>(spacecraft)Release of microbial contamination from fractured so</td>
<td>880</td>
</tr>
<tr>
<td>(spacecraft)Research study to definitize a bio-isolation suit sy</td>
<td>417</td>
</tr>
<tr>
<td>(spacecraft)RTG radiation test laboratory</td>
<td>179</td>
</tr>
<tr>
<td>(spacecraft)RTG shield optimization study/Unmanned</td>
<td>1148</td>
</tr>
<tr>
<td>(spacecraft)Special problem of encapsulated contaminants</td>
<td>133</td>
</tr>
<tr>
<td>(spacecraft)Sterile access studies in the Pilot Assembly Sterili</td>
<td>344</td>
</tr>
<tr>
<td>(spacecraft)Sterilizable electronic packaging, connectors, wires</td>
<td>389</td>
</tr>
<tr>
<td>(spacecraft)Sterilizable inertial sensors: high performance acce</td>
<td>498</td>
</tr>
<tr>
<td>(spacecraft)Sterilizable liquid propulsion system</td>
<td>705</td>
</tr>
<tr>
<td>Spacecraft sterilization</td>
<td>45</td>
</tr>
<tr>
<td>Spacecraft sterilization</td>
<td>563</td>
</tr>
<tr>
<td>spacecraft sterilization/Analytical techniques in planetary quar</td>
<td>1062</td>
</tr>
<tr>
<td>spacecraft. Sterilization and bioassay/Technology feasibility</td>
<td>735</td>
</tr>
<tr>
<td>Spacecraft sterilization and contamination of Mars</td>
<td>1031</td>
</tr>
<tr>
<td>Spacecraft sterilization and planetary quarantine</td>
<td>75</td>
</tr>
<tr>
<td>Spacecraft sterilization and planetary quarantine, background of</td>
<td>390</td>
</tr>
<tr>
<td>Spacecraft sterilization and the prevention of planetary contami</td>
<td>488</td>
</tr>
<tr>
<td>spacecraft sterilization/An engineer looks at</td>
<td>842</td>
</tr>
<tr>
<td>(spacecraft)Sterilization assembly development laboratory facili</td>
<td>990</td>
</tr>
<tr>
<td>spacecraft sterilization/Biological and engineering aspects of</td>
<td>701</td>
</tr>
<tr>
<td>Spacecraft sterilization by destructive heating</td>
<td>1156</td>
</tr>
<tr>
<td>(spacecraft)Sterilization compatibility of growth media for extr</td>
<td>858</td>
</tr>
<tr>
<td>(spacecraft sterilization)Contamination control</td>
<td>1224</td>
</tr>
<tr>
<td>spacecraft sterilization/Development and application of a system</td>
<td>319</td>
</tr>
<tr>
<td>spacecraft sterilization/Development of concepts for improved</td>
<td>1095</td>
</tr>
<tr>
<td>(spacecraft)Sterilization-environmental testing of initiators</td>
<td>74</td>
</tr>
<tr>
<td>spacecraft sterilization/Evaluation of current technology in</td>
<td>261</td>
</tr>
<tr>
<td>spacecraft sterilization/Evaluation of new penetrating sporicide</td>
<td>4</td>
</tr>
<tr>
<td>Spacecraft sterilization - grand requirements</td>
<td>843</td>
</tr>
<tr>
<td>spacecraft sterilization/Handbook of biological aspects of</td>
<td>655</td>
</tr>
<tr>
<td>Topic</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Spacecraft sterilization. Immaculate Voyager will visit Mars</td>
<td>36</td>
</tr>
<tr>
<td>Spacecraft sterilization - implications and suggestions</td>
<td>246</td>
</tr>
<tr>
<td>spacecraft sterilization/Improved method of</td>
<td>1035</td>
</tr>
<tr>
<td>spacecraft sterilization/Interdisciplinary design evaluation mod</td>
<td>762</td>
</tr>
<tr>
<td>Spacecraft sterilization methods aired at COSPAR/Soviet</td>
<td>37</td>
</tr>
<tr>
<td>spacecraft sterilization/Methods for</td>
<td>73</td>
</tr>
<tr>
<td>spacecraft sterilization/Microbial control in assembly areas nee</td>
<td>40</td>
</tr>
<tr>
<td>spacecraft sterilization/Microbiological contamination control i</td>
<td>954</td>
</tr>
<tr>
<td>Spacecraft sterilization - New engineering and sanitation techno</td>
<td>341</td>
</tr>
<tr>
<td>spacecraft sterilization/Objectives and technology of</td>
<td>489</td>
</tr>
<tr>
<td>spacecraft sterilization/Objectives and technology of</td>
<td>485</td>
</tr>
<tr>
<td>spacecraft sterilization/Objectives and technology of</td>
<td>493</td>
</tr>
<tr>
<td>spacecraft/Sterilization of</td>
<td>580</td>
</tr>
<tr>
<td>spacecraft/Sterilization of</td>
<td>899</td>
</tr>
<tr>
<td>spacecraft/Sterilization of electronic components of</td>
<td>212</td>
</tr>
<tr>
<td>spacecraft/sterilization of interplanetary</td>
<td>549</td>
</tr>
<tr>
<td>(spacecraft)Sterilization of interplanetary vehicles</td>
<td>902</td>
</tr>
<tr>
<td>spacecraft/sterilization of Mars</td>
<td>833</td>
</tr>
<tr>
<td>spacecraft/sterilization/Optimization of oven-heating profiles i</td>
<td>331</td>
</tr>
<tr>
<td>(spacecraft sterilization)Optimizing thermal and radiation effec</td>
<td>996</td>
</tr>
<tr>
<td>spacecraft sterilization parameters/Studies of</td>
<td>1255</td>
</tr>
<tr>
<td>spacecraft sterilization/Planning, evaluation and analytical stu</td>
<td>322</td>
</tr>
<tr>
<td>spacecraft sterilization/Planning, evaluation and analytical stu</td>
<td>333</td>
</tr>
<tr>
<td>spacecraft sterilization/Planning, evaluation and analytical stu</td>
<td>334</td>
</tr>
<tr>
<td>Spacecraft sterilization procedures in the USSR</td>
<td>743</td>
</tr>
<tr>
<td>spacecraft sterilization/Proceedings of the conference on</td>
<td>978</td>
</tr>
<tr>
<td>spacecraft sterilization processes/Observations about and a bibl</td>
<td>857</td>
</tr>
<tr>
<td>spacecraft sterilization process times/Recommendations for deter</td>
<td>1145</td>
</tr>
<tr>
<td>Spacecraft sterilization program</td>
<td>778</td>
</tr>
<tr>
<td>spacecraft sterilization program/Filter applications for</td>
<td>258</td>
</tr>
<tr>
<td>Spacecraft sterilization requirements</td>
<td>224</td>
</tr>
<tr>
<td>spacecraft sterilization requirements/Effect of microbial releas</td>
<td>1076</td>
</tr>
<tr>
<td>spacecraft sterilization requirements/Potential effects of recen</td>
<td>1079</td>
</tr>
<tr>
<td>spacecraft sterilization requirements/Rational model for</td>
<td>113</td>
</tr>
<tr>
<td>spacecraft sterilization/Role and responsibility of NASA in rela</td>
<td>831</td>
</tr>
<tr>
<td>(spacecraft)Sterilization. Selected bibliography from the litera</td>
<td>423</td>
</tr>
<tr>
<td>spacecraft sterilization/Special problems in</td>
<td>209</td>
</tr>
<tr>
<td>Spacecraft sterilization: Specific examples</td>
<td>844</td>
</tr>
<tr>
<td>(spacecraft sterilization)Sporicidal activity of ethylene oxide</td>
<td>697</td>
</tr>
<tr>
<td>spacecraft sterilization standards/Critique of current</td>
<td>1063</td>
</tr>
<tr>
<td>spacecraft sterilization/Status review of technology development</td>
<td>259</td>
</tr>
<tr>
<td>spacecraft sterilization/Status review of technology development</td>
<td>260</td>
</tr>
<tr>
<td>(spacecraft sterilization)Study of thermal kill of viable organi</td>
<td>527</td>
</tr>
<tr>
<td>(spacecraft sterilization)Study program on development of mathem</td>
<td>760</td>
</tr>
<tr>
<td>(spacecraft sterilization)Survival of microorganisms in space</td>
<td>699</td>
</tr>
<tr>
<td>(spacecraft)Sterilization techniques</td>
<td>586</td>
</tr>
<tr>
<td>spacecraft sterilization, techniques and equipment</td>
<td>845</td>
</tr>
<tr>
<td>spacecraft sterilization technology program: Status report/JPL</td>
<td>634</td>
</tr>
<tr>
<td>(spacecraft sterilization)Testing a sterilizable liquid propuls</td>
<td>290</td>
</tr>
</tbody>
</table>
Spacecraft sterilization. Thermal considerations
(spacecraft sterilization) Thermal death of *Bacillus subtilis* var
Spacecraft sterilization training manual
spacecraft/ Sterilizing unmanned
spacecraft structures/ Thermal sterilization of
(spacecraft) Study of analytical techniques in planetary quarantine
(spacecraft) Study of the probability of depositing viable organisms
(spacecraft) Study program on the development of mathematical models
(spacecraft) Study program on the development of mathematical models
(spacecraft) Survival of microorganisms on covered stainless steel
spacecraft system/ Biological decontamination of a
spacecraft system/ Surveyor
(spacecraft) Technical manuals and planning study in planetary quarantine
spacecraft/ Techniques for sterile insertion and repair of
spacecraft/ Terminal sterilization process calculation for
spacecraft tests/ JPL develops double vacuum chamber for
spacecraft thermal math modeling terminal sterilization cycle/ Te
spacecraft thermal math modeling terminal sterilization cycle/ Te
(spacecraft) Thermoradiation as a means of bacterial sterilization space by heating. Biological handbook for
spacecraft to be sterilized by heating/ Design criteria for typical
spacecraft to be sterilized by heating/ Development of quality as
(spacecraft) Use of ethylene oxide: partially annotated bibliography
(spacecraft) Use of sporicides and heat to sterilize resins
(spacecraft) User's manual for the planetary quarantine lunar interplanetary
(spacecraft) User's manual for planetary quarantine lunar program
spacecraft using Cobalt 60/ Feasibility of thermoradiation sterilization spacecraft which are to be sterilized by heating/ Manufacturing a
Space environment
space environmental studies/ Natural
Space environment/ criteria guidelines for use in space vehicle design
Space environment/ Effect of ultraviolet radiation upon microorganisms
Space environments on the viability of microorganisms/ Effects of
Space experiments/ Potentially harmful effects of
Space exploration: Microbiology and sterilization/ Biostatistics
Space exploration: Microbiology and sterilization/ Biostatistics
Space exploration: Microbiology and sterilization/ Biostatistics
Space exploration: Microbiology and sterilization/ Biostatistics
Space exploration: Microbiology and sterilization/ Biostatistics
Space exploration: Microbiology and sterilization/ Biostatistics
Space exploration: Microbiology and sterilization/ Biostatistics
Space exploration: Microbiology and sterilization/ Biostatistics
Space exploration: Role of soil science in
Space exploration/ Sterilization requirements for
Spaceflight hardware/ Engineering guidelines for clean assembly a
(spaceflight hardware) Microbial cleanliness at JPL's EASL and SA
spaceflight hardware/ Planetary quarantine. Techniques for the
(spaceflight) Sterilization requirements for space exploration
space. Further rocket and balloon borne exposure experiments/ Survey
Space hardware assay methodology
space vehicle components/Ecology and thermal inactivation of mic 24
space vehicle components/Ecology and thermal inactivation of mic 25
space vehicle components/Ecology and thermal inactivation of mic 26
space vehicle components/Ecology and thermal inactivation of mic 174
space vehicle components/Ecology and thermal inactivation of mic 175
space vehicle components/Ecology and thermal inactivation of mic 981
space vehicle components/Ecology and thermal inactivation of mic 982
space vehicle components/Ecology and thermal inactivation of mic 983
space vehicle components/Ecology and thermal inactivation of mic 984
space vehicle components/Ecology and thermal inactivation of mic 985
space vehicle components/Ecology and thermal inactivation of mic 986
space vehicle components/Ecology and thermal inactivation of mic 987
space vehicle components/Ecology and thermal inactivation of mic 988
space vehicle components/Ecology and thermal inactivation of mic 992
(space vehicle)Contributions of microbiological safety to space development (1969 revision)/Space environment crit 1263
(space vehicle)Engineering problems in capsule sterilization 740
(space vehicle)Estimation of planetary contamination probabilities 327
(space vehicle)Investigation of a sono-chemical approach in sterilization 922
space vehicles: problem of mutual contamination/Sterilization of space vehicles/Sterilization and decontamination techniques for space vehicles/Sterilization of lunar and planetary space vehicle sterilization/Application of thermal modeling to space vehicle sterilization/Planetary quarantine and Space vehicle sterilization problem 272
space vehicles to prevent extraterrestrial biological contamination 247
space with terrestrial life/Discussion of a possible contamination scenario 152
Spearman estimation for a simple exponential model 255
specifications/Review of heat specifications/Review of heat 1253
1254
(spor)Adsorption of formaldehyde by various surfaces during gas sterilization 122
(spor)Analytical method for calculating heat sterilization time 263
spore and staphylococcal populations/Synergism in ethylene oxide sterilization 860
(spor)Bacteriology of "clean rooms" 768
(spor)Bacteriology of clean rooms 776
(spor)Beta-propiolactone vapor as a disinfectant 550
(spor)Biological and physical factors in dry heat sterilization 140
(spor)Biological-chemical indicator for ethylene oxide sterilization 127
(spor)Biophysical analysis of the spor control procedure/Limitations of initiation of germination 930
(spor)Continuation of development of typical Mars landing capsules 47
(spor)Continuation of development of typical Mars landing capsules 48
(spor)Biostatistics and space exploration: Microbiology and ster 216
(spor)Biostatistics and space exploration: Microbiology and ster 218
(spor)Comparison of microbial contamination levels on Barbac an spor contamination located between mated surfaces and on exter 929
(spor)Continuation of development of typical Mars landing capsu 930
(spor)Continuation of development of typical Mars landing capsu 47
(spor)Biostatistics and space exploration: Microbiology and ster 216
(spor)Biostatistics and space exploration: Microbiology and ster 218
(spor)Comparison of microbial contamination levels on Barbac an spor contamination located between mated surfaces and on exter 929
(spor)Continuation of development of typical Mars landing capsu 930
(spor)Continuation of development of typical Mars landing capsu 47
(spor)Biostatistics and space exploration: Microbiology and ster 216
(spor)Biostatistics and space exploration: Microbiology and ster 218
(spor)Comparison of microbial contamination levels on Barbac an spor contamination located between mated surfaces and on exter 929
(spor)Continuation of development of typical Mars landing capsu 930
(spor)Continuation of development of typical Mars landing capsu 47
(spor)Biostatistics and space exploration: Microbiology and ster 216
(spor)Biostatistics and space exploration: Microbiology and ster 218
(spor)Comparison of microbial contamination levels on Barbac an spor contamination located between mated surfaces and on exter 929
(spor)Continuation of development of typical Mars landing capsu 930
(spor)Continuation of development of typical Mars landing capsu 47
(spor)Biostatistics and space exploration: Microbiology and ster 216
(spor)Biostatistics and space exploration: Microbiology and ster 218
(spor)Comparison of microbial contamination levels on Barbac an spor contamination located between mated surfaces and on exter 929
(spor)Continuation of development of typical Mars landing capsu 930
(spor)Continuation of development of typical Mars landing capsu 47
(spore) Design of thermal destruction apparatus 894
(spool) Mathematical basis for a diffusion model of mi 330
(spore) Development of parametric data for the establishment of a 427
(spore) Discussion of possible contamination of space with terres 245
(spore) Dry heat destruction rates for microorganisms on open sur 152
(spore) Ecology and thermal inactivation of microbes in and on in 884
(spore) Ecology and thermal inactivation of microbes in and on in 21
(spore) Ecology and thermal inactivation of microbes in and on in 22
(spore) Ecology and thermal inactivation of microbes in and on in 23
(spore) Ecology and thermal inactivation of microbes in and on in 24
(spore) Ecology and thermal inactivation of microbes in and on in 25
(spore) Ecology and thermal inactivation of microbes in and on in 26
(spore) Ecology and thermal inactivation of microbes in and on in 981
(spore) Ecology and thermal inactivation of microbes in and on in 982
(spore) Ecology and thermal inactivation of microbes in and on in 983
(spore) Ecology and thermal inactivation of microbes in and on in 987
(spore) Effect of environment on biological burden during spacecr 1164
(spore) Effect of ultra-high vacuum on Bacillus subtilis var. nig 294
(spore) Environment microbiology as related to planetary quaran 1195
(spore) Environment microbiology as related to planetary quaran 886
(spore) Environment microbiology as related to planetary quaran 888
(spore) Ethylene oxide gaseous sterilization. Influence of method 311
(spore) Evaluation of alcohol sporulation method 594
(spore) Evaluation of new penetrating sporicide potentially usefu 4
(spore) Evaluation of quantal response model with variable concen 228
(spore) Evaluation of quantal response model with variable concen 223
(spore) Experiment to determine the effects of solid and liquid r 846
(spore) Experiment to determine the effects of solid and liquid r 1303
(spore) Germicidal activity of ethylene oxide/Reduction of microb 822
(spore) Spore germination by alcohols/Reversible inhibition of 1191
(spore) Heat destruction patterns 890
(spore) Hot air sterilization at 200 ° 976
(spore) Inactivation in a composite heat and gamma radiation envir 295
(spore) Investigation of a sono-chemical approach in sterilizatio 924
(spore) Investigation of gamma sterilization 266
(spore) Investigation of methods for the sterilization of potting 1195
(spore) Investigations into diffusion model of dry heat steriliza 60
(spore) Investigations of methods for sterilization of potting co 1199
(spore) Investigations of methods for sterilization of potting co 1201
(spore) Spore isolates from the Mariner-Mars 1969 spacecraft/Relative fr 90
(spore) Kinetics of disinfection 966
(spore) Kinetics of thermal death of bacteria 786
(spore) Life in extraterrestrial environments 453a
(spore) Low temperature growth characteristics of clostridia 1014
(spore) Methyl bromide as an aid to ethylene oxide sterilization 952
(spore) Microbial release from solids after simulated hard landin 398
(spore) Microbial resistance to ethylene oxide 403
Microbiological aspects of ethylene oxide sterilization
Microbiological assay of space hardware
spore moisture content on the dry heat resistance of Bacillus subtilis
Natural selection of microorganisms in extreme environments
Observations on bacterial thermal death time curves
Observations regarding factors important in dry heat sterilization of spores on selected lander capsule surfaces/Thermal death of Bacillus subtilis spore populations/Dry heat inactivation kinetics of naturally occurring Bacillus subtilis spores/Possibility of using hydrogen peroxide mixed with a detergent
Preliminary sublimation studies
Probability of planetary contamination by space probes
Procedures for microbiological examination of space hardware
Progressive biological monitoring on lunar orbiters
Properties of heat-resistant and heat-sensitive strains of Bacillus subtilis
Quality assurance monitoring of microbiological aspects of spore recoveries from diatomaceous earth pellets used as a protection for microorganisms
Reduction of microbial dissemination and germicidal activity
Reduction of microbial dissemination and germicidal activity
Reduction of microbial dissemination and germicidal activity
Reduction of microbial dissemination and germicidal activity
Release of microbial contamination from fractured solids
Reproducibility of results in dry heat resistance studies
Resistance of microorganisms to high vacuums
Survival of terrestrial microorganisms in space
Resistivity of microorganisms to thermal inactivation by gamma rays
Resistivity of microorganisms to thermal inactivation by gamma rays
Review of naturally occurring interior microbial contamination and its relation to dry heat resistance/Adsorption-desorption studies of spores and soil organisms/Combined effects of ultrahigh vacuum and high pressure on spores and some considerations for the sterilization of spacecraft spores and their resistance to ethylene oxide/The age of Bacillus subtilis spores at ultrahigh temperatures/Heat injury of Bacillus subtilis spores by dry heat/Measurement of the destruction of bacterial spores/Effect of cell moisture on the thermal inactivation rate of spores/Effect of dry heat upon bacterial spores/Effect of gamma and x-rays upon dry bacterial spores/Effect of temperature and gas velocity on the dry heat death rate of spores/Services provided in support of the planetary quarantine/Services provided in support of the planetary quarantine/Services provided in support of the planetary quarantine/Services provided in support of the planetary quarantine/Services provided in support of the planetary quarantine/Services provided in support of the planetary quarantine/Services provided in support of the planetary quarantine/Services provided in support of the planetary quarantine/Services provided in support of the planetary quarantine/Services provided in support of the planetary quarantine/Services provided in support of the planetary quarantine
Services provided in support of the planetary quarantine

spores/Gamma irradiation of B. subtilis

spores in atmospheres of different water contents/Heat resistance

spores included within water-soluble crystals/Dry heat on gaseous

spores in hygroscopic environments/Ethylene oxide sterilization

spores in simulated space vehicle components/Dry heat destruction

spores/Kinetics of heat activation and of thermal death of bacteria

spores located between mated surfaces/Effect of humidity, locatio

spores located between mated surfaces/Effect of humidity, locatio

spores/Observations regarding the sterilizing effect of ethylene

spores occluded in water-insoluble crystals to three sterilizatio

spores of Bacillus subtilis var. niger hermetically sealed in va

spores of Bacillus subtilis var. niger/Method for obtaining free

spores of Bacillus subtilis var. niger on Kapton and Teflon film

spores of Bacillus subtilis var. niger/Rapid heat treatment of b

spores of Clostridium welchii/Heat and radiation resistance and

spores on mated surfaces/Dry heat resistance of B. subtilis var.

spores on surfaces: effect of humidity in an open system/Dry heat

spores on test surfaces/Electrostatic deposition device to deposit

spores/Probit method to interpret thermal inactivation of bacteria

spores/Studies on trace elements in the sporulation of bacteria

spores/Studies with a simulated Martian environment. Germination

(spore)Status report on D, z, and Aa value investigations

(spore)Sterilization of electronic components of spacecraft

(spore)Sterilization with methyl bromide vapor

(spore)Sterilizing action of gaseous ethylene oxide. Effect of

(spore)Sterilizing action of gaseous ethylene oxide. Sterilizati

(spore)Sterilizing effects of high intensity airborne sonic and

spores to ultraviolet and gamma radiation while exposed to ultra

(spore)Study of aseptic maintenance by pressurization

spores under several temperature and humidity conditions/Surviva

spores under several temperature and humidity conditions/Surviva

spores under several temperature and humidity conditions/Surviva

spores under some simulated lunar surface conditions/Survival of

(spore)Survival of microorganisms in space

spores with gaseous ethylene oxide/Influence of various pretreat

(spore)Synergistic effects in sonochemical sterilization

(spore)Techniques for the limitation of biological loading of sp

spore test piece for the control of ethylene oxide sterilization

(spore)Thermal destruction of microorganisms

(spore)Use of ethylene oxide: a partially annotated bibliography

(spore)Vacuum probe: new approach to the microbiological samplin

sporicidal activity of Beta-propiolactone vapor/Effect of bacteri

Sporicidal activity of ethylene oxide

sporicidal activity of ethylene oxide gas/Effect of dimethyl sul

sporicidal activity of ethylene oxide/Microbiological aspects of

sporicidal activity of ethylene oxide/Microbiological aspects of

184
sporicidal activity of formaldehyde/Effect of relative humidity 553
Sporicidal activity of peracetic acid and Beta-propiolactone at 615
Sporicidal effect of peracetic acid vapor 956
Sporicidal activity of sodium hypochlorite at subzero temperature 616
sporicide activity of ethylene oxide/Effect of $A_w$ on the 636
sporicides and heat to sterilize resins/Use of 948
(sporicide) Sterile access studies in pilot assembly sterilizer system 344
sporulation mutations induced by heat in Bacillus subtilis 840
sporulation of bacteria and the germination of bacterial spores/stainless steel initially contaminated by handling and by aerial 947
standards/Critique of current spacecraft sterilization 1063
Standards for clean rooms and work stations for the microbiologically 814
standards of sterility/Value of agreed standards of sterility 528
staphylococcal populations/Synergism in ethylene oxide-methyl bromide 860
Staphylococcus epidermidis population/Comparison of methyl bromide 853
statistics/Certain uncorrelated nonparametric test 557
(statistics) Estimation for a one-parameter exponential model 226
(statistics) Estimation for a one-parameter exponential model 227
(statistics) Method for fitting linear combinations of exponentials 214
(statistics) Rank tests for randomized blocks when the alternative 559
(statistics) Simultaneous nonlinear estimation 66
(statistics) Spearman estimation for a simple exponential model 255
statistics -$2 \ln \lambda_n$ under a class of local alternatives. Minimum a 1289
sterilant gases/Compatibility of Centaur/Surveyor materials with 1024
sterilants in terrestrial and extraterrestrial environments/Effective 499
sterile assembly techniques/Experimental study of 599
sterile assembly techniques/Experimental study of 717
sterile insertion techniques/Experimental study of 719
Sterile insertion - aerospace application of gnotobiotic technology 1022
sterile insertion and repair of spacecraft/Techniques for 1188
sterile insertion engineering model hardware/Development of mechanical 277
sterile insertion/Feasibility study of liquid 1165
sterile insertion/Liquid 1160
sterile insertion repair technique/Develop and test of a 1020
sterile insertion system. Quality assurance/Mechanical 278
sterile insertion techniques/Design feasibility study of 39
sterile insertion techniques for spacecraft/Investigation of the 1152
Sterilising properties of ethylene oxide 901
(sterility) Dry heat resistance of spores of Bacillus subtilis at 145
sterility test medium for materials exposed to gaseous ethylene 284
sterility/Value of agreed standards of 528
sterilizable components for planetary quarantine/Definition of relief 208
sterilizable impact resistant cell development/Heat 79
sterilizable insertion/Feasibility study of liquid 1165
sterilizable multiplier phototubes/Improved 300
Sterilizable photomultiplier tubes 299
sterilizable piece parts/Matrix test of sterilizable piece parts/Matrix test of sterilizable piece parts/Matrix test of sterilizable planetary landing capsules/Visual monitoring during sterilizability of scientific payloads for planetary exploration sterilization (sterilization)Absorption and desorption of ethylene oxide sterilization agents/Resistance of B. subtilis var. niger spores sterilization. Alternatives to reduce the problems from terminal sterilization (sterilization)Analysis of planetary quarantine requirements sterilization/Analytical techniques in planetary quarantine and sterilization and assembly of spacecraft/The assembly/sterilizer sterilization and bioassay/Technology feasibility spacecraft sterilization and contamination control with application to spacecraft sterilization and contamination of Mars/Spacecraft sterilization and decontamination techniques for space vehicles sterilization and detoxification/Paraformaldehyde for surface sterilization and ethylene oxide decontamination environments/En sterilization and planetary quarantine/Spacecraft sterilization and quarantine parameters for consideration during sterilization and storage compatibility study of growth media for sterilization and the prevention of planetary contamination/Spacecraft sterilization and thermal vacuum effects on spacecraft polymeric sterilization and thermal vacuum exposures/Spacecraft polymeric sterilization and thermal vacuum on spacecraft polymeric product sterilization/An engineer looks at spacecraft sterilization: a partially annotated bibliography/Use of ethylene (sterilization)Application of bench tests in development of heat sterilization/Application of thermal modeling to space vehicle sterilization assembly and development laboratory routine cleaning sterilization assembly development laboratories EASL and SADL/Mi sterilization assembly development laboratory/Biological monitor sterilization assembly development laboratory/Quality assurance (sterilization)Assembly/sterilizer facility feasibility program (sterilization)Assembly/sterilizer facility feasibility program sterilization as state of the art/Spacecraft preparation and sterilization at 200°/Hot air sterilization/Bacterial spore test piece for the control of ethylene (sterilization)Bactericidal activity of ethylene oxide and methanol sterilization/Bacteriology of clean rooms sterilization/Biological and engineering aspects of spacecraft sterilization/Biological-chemical indicator for ethylene oxide (sterilization)Biological contamination control sterilization/Biostatistics and space exploration: Microbiology sterilization/Biostatistics and space exploration: Microbiology sterilization/Biostatistics and space exploration: Microbiology sterilization/Biostatistics and space exploration: Microbiology 186
sterilization/Biostatistics and space exploration: Microbiology
sterilization by gaseous oxide/Evaluation of
dermatization by heat and radiation/Study of the factors influen
terilization by heating/Quality assurance requirements manual f
steralization by making use of ethylene oxide and methyl bromide
sterilization canister separation joint/Capsule
sterilization chamber for interplanetary payload/Conceptual desi
(sterilization)Clean room complex for microbial contamination co
sterilization/Comparative studies of conceptual design and quali
sterilization compatibility of growth media for extraterrestrial
sterilization. Concentration and temperature effects/Ethylene ox
(sterilization)Conference on hazard of planetary contamination d
(sterilization)Consideration for the Martians
sterilization container/Continuation of development of a typical
sterilization container/Continuation of development of a typical
sterilization container/Development of a typical Mars landing ca
sterilization container/Development of a typical Mars landing ca
sterilization container/Development of a typical Mars landing ca
sterilization containers of planetary landers/Design requiremen
sterilization/Contamination and
(sterilization)Contamination of Mars
(sterilization)Control of microbial contamination
sterilization conversion/High vacuum
sterilization criteria set/Severe Voyager
sterilization, a current review of principles and practices/Ethy
sterilization cycle for a possible Mars capsule/Determination of
(sterilization cycles)Progressive biological monitoring on lunar
(sterilization cycles)Services provided in support of the planet
sterilization cycles/Studies on ethylene oxide-Freon 12 decontam
sterilization cycle/Technology feasibility spacecraft thermal ma
sterilization cycle/Technology feasibility spacecraft thermal ma
(sterilization)Dangers of contamination of planets and the Earth
(sterilization)Description of the model assembly sterilizer for
(sterilization)Design and development of a bio-isolator suit sys
(sterilization)Design criteria for typical planetary spacecraft
sterilization/Development and application of a system model for
sterilization/Development of a biological indicator for dry heat
sterilization/Development of concepts for improved spacecraft
(sterilization)Dry heat destruction rates for microorganisms on
(sterilization)Dry heat on gaseous chemical resistance of Bacill
(sterilization)EASL/SADL test and operations
(sterilization)Ecology and thermal inactivation of microbes in a
(sterilization)Ecology and thermal inactivation of microbes in a
(sterilization)Ecology and thermal inactivation of microbes in a
(sterilization)Effects of A_w on the sporicidal activity of ethyl
sterilization. Effects of humidity and water activity on the spo
sterilization efficacy of gaseous formaldehyde/Investigations on
sterilization/Engineering problems in capsule
(sterilization)Environmental microbiology as related to planetar
(sterilization)Environmental microbiology as related to planetar
(sterilization)Estimation of microbial release probabilities fro
sterilization/Estimation of microbial survival in heat
(sterilization)Ethylene oxide-Freon 12 decontamination procedure
(sterilization)Ethylene oxide resistance of nondesiccated and de
(sterilization)Evaluation of alcohol sporulation method
sterilization/Evaluation of current technology in attaining plan
(sterilization)Evaluation of new penetrating sporicide potential
sterilization. Experimental apparatus and methods/Microbiologica
Sterilization facilities
Sterilization facility concepts
sterilization/Feasibility study for combined method of
(sterilization)Feasibility study of liquid sterile insertion
sterilization for planetary-impacting spacecraft/Dry heat
sterilization for planetary-impacting spacecraft/Dry heat
sterilization/Gaseous
sterilization/Gaseous
sterilization: General review/Biological and physical factors in
sterilization - grand requirements/Spacecraft
Sterilization handbook
sterilization/Handbook of biological aspects of spacecraft
(sterilization)Heat sterilizable battery development
(sterilization)Heat sterilizable impact resistant cell developme
sterilization. Immaculate Voyager will visit Mars/Spacecraft
sterilization - implications and suggestions/Spacecraft
sterilization/Improved method of spacecraft
sterilization in combined techniques/The place of
(sterilization)Industrial applications of laminar airflow
sterilization. Influence of method of humidification/Ethylene ox
sterilization. Influence of thickness of polyethylene film on th
sterilization in spacecraft design/Effect of
sterilization in space programs/Contamination control and
sterilization in space research/General review of chemical
(sterilization)Interactive computer information system for plane
sterilization/Interdisciplinary design evaluation models of bioc
sterilization in ultra-high vacuum and outer space: kinetic comp
(sterilization)Investigation of feasibility of sterile assembly
sterilization/Investigation of gamma
(sterilization)Investigation of spacecraft materials that suppor
sterilization/Investigations into a diffusion model of dry heat
sterilization: Its development and application to components of
sterilization laboratory/Clean assembly and
Sterilization literature abstracts
sterilization/Log-normal model for microbial survival in heat
(sterilization)Lunar rough landing capsule development program
(sterilization)Mathematical basis for a diffusion model of micro
sterilization methods aired at COSPAR/Soviet spacecraft

188
sterilization/Methods for spacecraft
sterilization/Methyl bromide as an aid to ethylene oxide
sterilization/Microbial contamination control after terminal
(sterilization)Microbial contamination in a clean room when occu
(sterilization)Microbial contamination in clean rooms
sterilization/Microbial control in assembly areas needed for spa
sterilization. Microbial resistance to ethylene oxide/Microbiolo
(sterilization)Microbiological assay of space hardware
(sterilization)Microbiological barrier techniques
sterilization/Microbiological contamination control in spacecraf
(sterilization)Microbiological evaluation of a large volume air
(sterilization)Microbiologic filters - liquid and gas
(sterilization)Microbiology quality activities for a planetary m
(sterilization)Microorganisms on Mars
sterilization model/A stochastic
sterilization modeling/Dry heat
(sterilization)NASA standard procedures for the microbiological
(sterilization)National Aeronautics and Space Administration pos
sterilization - New engineering and sanitation technology/Spacec
(sterilization)1973 Viking voyage to Mars
sterilization/Objectives and technology of spacecraft
sterilization/Objectives and technology of spacecraft
sterilization/Observations regarding factors important in dry he
(sterilization)Observations regarding the sterilizing effect of
sterilization of activated carbon/Heat
Sterilization of electronic components of spacecraft
Sterilization of instruments and materials with Beta-propiolacto
Sterilization of interplanetary spacecraft
Sterilization of interplanetary vehicles
sterilization of large interplanetary structures/Experimental he
sterilization of large interplanetary structures/Experimental he
sterilization of large interplanetary structures/Experimental he
sterilization of large interplanetary structures/Experimental he
sterilization of large interplanetary structures/Experimental he
sterilization of large interplanetary structures/Experimental he
sterilization of large interplanetary structures/Experimental he
sterilization of large interplanetary structures/Experimental he
sterilization of liquid by filtration/Certification of probabili
sterilization of lunar and planetary spacecraft/Decontamination
Sterilization of lunar and planetary space vehicles
Sterilization of Mars spacecraft
sterilization of microorganisms/Analysis of vacuum effects in th
sterilization of microorganisms at 105°/Study of dry heat
sterilization of microorganisms/Physical methods of
sterilization of microorganisms/Rational model for thermal
sterilization of microorganisms/Role of DNA in wet heat
sterilization of microorganisms/Role of water activity in the dr
| sterilization of planetary capsules/Test environments associated | 625 |
| sterilization of potting compounds and mated surfaces/Investigat | 1195 |
| sterilization of potting compounds and mated surfaces/Investigat | 1196 |
| sterilization of potting compounds and mated surfaces/Investigat | 1199 |
| sterilization of potting compounds and mated surfaces/Investigat | 1201 |
| Sterilization of spacecraft | 580 |
| Sterilization of spacecraft | 899 |
| sterilization of spacecraft components/Effect of current cleanin | 754 |
| sterilization of spacecraft components/Effect of current cleanin | 1147 |
| sterilization of spacecraft components/Thermal death studies on | 654 |
| sterilization of spacecraft/Engineering problems in | 741 |
| sterilization of spacecraft/Modern methods and means of | 1228 |
| sterilization of spacecraft/NASA requirements for the | 484 |
| sterilization of spacecraft/polymeric materials/Effects of decon | 679 |
| sterilization of spacecraft - preliminary report/Feasibility of | 994 |
| sterilization of spacecraft]/Principles, methods and problems [m | 1230 |
| sterilization of spacecraft/Proceedings of meeting on problems a | 812 |
| sterilization of spacecraft/Thermal | 1177 |
| sterilization of spacecraft using Cobalt 60/Feasibility of therm | 597 |
| sterilization of spaceflight hardware/Engineering guidelines for | 237 |
| Sterilization of space hardware | 892 |
| Sterilization of space probe components | 142 |
| Sterilization of space probe components | 649 |
| sterilization of space probe components/Studies for | 650 |
| sterilization of space probe components/Studies for | 653 |
| sterilization of space probe components/Studies for | 717 |
| Sterilization of space vehicles: problem of mutual contamination | 1297 |
| sterilization of space vehicles to prevent extraterrestrial biol | 247 |
| sterilization of spores in hygroscopic environments/Ethylene oxi | 854 |
| Sterilization of suspensions of Serratia marcescens and spores o | 837 |
| sterilization of unmanned lunar and planetary missions/Examinati | 590 |
| Sterilization of unmanned planetary and lunar space vehicles. En | 592 |
| sterilization of unmanned space vehicles/Problems in | 591 |
| sterilization of very dry spore and staphylococcal populations/S | 860 |
| sterilization of Voyager capsule/Plan for | 626 |
| sterilization on separation, entry, descent and landing phases o | 1134 |
| sterilization/Operations problem of | 588 |
| sterilization operations/Scale-up of heat | 265 |
| sterilization/Optimization of oven-heating profiles in spacecraft | 331 |
| sterilization parameters/Studies of spacecraft | 1255 |
| (sterilization)Peracetic acid aerosols | 444 |
| (sterilization)Planetary quarantine analysis | 434 |
| sterilization/Planetary quarantine and space vehicle | 234 |
| (sterilization)Planetary quarantine plan, Voyager project | 1159 |
| (sterilization)Planetary quarantine: principles, methods and pro | 486 |
| sterilization/Planning, evaluation and analytical studies in pla | 322 |
| sterilization/Planning, evaluation and analytical studies in pla | 333 |
| sterilization/Planning, evaluation and analytical studies in spa | 334 |
| (sterilization)Polymers for use in sterilized spacecraft | 658 |
(sterilization) Possibility of using hydrogen peroxide mixed with 
(sterilization) Potentially harmful effects of space experiments 
(sterilization) Present day usage of clean rooms in medical and 
sterilization/ Problem areas with ethylene oxide 
(sterilization) Problems in the design of unmanned spacecraft for 
sterilization problems/ Investigation of a sono-chemical approach 
sterilization problems/ Investigation of a sono-chemical approach 
sterilization problems/ Investigation of a sono-chemical approach 
sterilization problems/ Investigation of a sono-chemical approach 
sterilization problems/ Investigation of a sono-chemical approach 
sterilization problems/ Investigation of a sono-chemical approach 
sterilization problems/ Investigation of a sono-chemical approach 
sterilization problems on a Mars atmospheric entry probe/ A study 
sterilization problems/ Research on microbiological 
sterilization problem/ The space 
(sterilization) Procedures for microbiological examination of spa 
sterilization procedures for planetary landers 
(sterilization) Procedures for the microbiological examination of 
sterilization procedures in the USSR. Meeting on sterilization of 
(sterilization) Procedures necessary for the prevention of planet 
sterilization procedures/ Sampling and verification in large-scal 
sterilization/ Proceedings of the conference on spacecraft 
sterilization process calculation for spacecraft/ Terminal 
sterilization processes/ Observations about and a bibliography of 
sterilization processes/ Types of biological indicators used in m 
sterilization process parameters/ Determination of terminal 
sterilization process times/ Recommendations for determination of 
sterilization program/ Capsule system advanced development 
sterilization program/ Filter applications for spacecraft 
sterilization program/ Spacecraft 
sterilization/ Proper use of biological indicators in 
sterilization/ Protective mechanisms affecting dry heat 
sterilization rates and protective influences/ Ethylene oxide 
(sterilization) Recent developments in planetary quarantine 
Sterilization reference booklet 
(sterilization) Release of microbial contamination from fractured 
sterilization- reliability effects/ Integrated test program for de 
sterilization requirements/ Effect of microbial release probabili 
Sterilization requirements for space exploration 
sterilization requirements/ Potential effects of recent findings 
sterilization requirements/ Rational model for spacecraft 
sterilization requirements/ Spacecraft 
sterilization requirements/ Spacecraft sterilization and planetar 
sterilization/ Role and responsibility of NASA in relation to spa 
Sterilization, Selected bibliography from the literature retriev 
sterilization/ Spacecraft 
(sterilization) Spacecraft cleaning and decontamination technique 
(sterilization) Spacecraft component survivability during entry i 
sterilization/ Space probe 
(sterilization) Special problem of encapsulated contaminants
(surface contamination) Sterilization of instruments and material
(surface contamination) Stochastic approach to bioburden estimation
(surface contamination) Technical manuals and planning study in p
(surface contamination) Testing and fabrication of plastic vacuum
(surface contamination) Vacuum probe for removing organisms from
(surface contamination) Vacuum probe sampler

Surface environment and possible biology of Mars
Surface sampler/Laboratory evaluation of the plastic vacuum prob
Surface samples/Testing and fabrication of plastic vacuum probe
Surfaces by chemical approaches/Detection of low levels of micro
Surfaces by chemical approaches/Detection of low levels of micro
Surfaces/Dry heat destruction rates of microorganisms on
Surfaces/Dry heat destruction rates of microorganisms on
Surfaces/Effect of time and temperature in assessing microbial c
Surfaces/Improved sonication method for removal of microorganism
Surfaces/Microbiological sampling of
Surfaces/studies to evaluate possible sources of variation in t
Surfaces/Study of the effects of relative humidity on small part
Surfaces/Survey of microbiological techniques for recovery from
Surface sterilization and detoxification/Paraformaldehyde for
Surface/Study of the dry heat resistance of naturally occurring
surfaces using radioisotope tracer techniques/Study of the biolo
Surfaces/Vacuum probe: new approach to the microbiological sampl
Surveyor spacecraft system
Surveyor spacecraft system
Surveyor sterilization. Studies of sterilization techniques
Surveyor III electrical cabling/Microbiological sampling of retu
Survivability during entry into the Jovian atmosphere/Spacecraft
Survival after simulated meteoroid impact/Microbial
Survival and growth of selected bacteria/Effect of diurnal freez
Survival and release of viable microorganisms from a solid mater
Survival chances of microorganisms under the environmental condi
(survival) Combined effects of ultrahigh vacuum and temperature o
(survival) Effect of ultrahigh vacuum on viability of microorgan
Survival in deep space environment/Microbial
Survival in heat sterilization/Estimation of microbial
Survival in heat sterilization/Log-normal model for microbial
Survival of Antarctic desert soil bacteria exposed to various te
Survival of Bacillus subtilis var. niger in association with soi
Survival of bacteria airborne in simulated Martian dust clouds/E
Survival of bacterial spores under some simulated lunar surface
Survival of cocci after exposure to ultrahigh vacuum at differen
Survival of microbial spores under several temperature and humid
Survival of microbial spores under several temperature and humid
Survival of microbial spores under several temperature and humid
Survival of microbial spores under several temperature and humid
Survival of microbial spores under several temperature and humid
Survival of microbial spores under several temperature and humid
Survival of microorganisms in desert soil exposed to five years
Survival of microorganisms in simulated Martian environment
Survival of microorganisms in simulated Martian environment
Survival of microorganisms in space
Survival of microorganisms on covered stainless steel initially
Survival of microorganisms under simulated space conditions
Survival of selected microorganisms in high ultraviolet flux
Survival of terrestrial microorganisms in simulated Martian envi
survival of terrestrial organisms under Martian conditions/Possi
(survival)Research and development in environmental microbiology
(survival)Response of viruses to environmental exposure
survive in simulated Jupiter atmosphere/Terrestrial organisms
survivor curves for planetary quarantine requirements/Logarithmi
swabbing/Recovery of known numbers of microorganisms from surfac
(swab-rinse)Services provided in support of the planetary quaran
(swab-rinse technique)Services provided in support of the planet
Synergism in ethylene oxide-methyl bromide sterilization of very
(systems analysis)Contamination control
Systems approach to contamination control

(technique)Abundance of microflora in soils of desert regions
(technique)AEC/NASA symposium on contamination control; current
(technique)Analysis of methods for growth detection in the searc
(technique)Antarctic dry valley soil microbial incubation and ga
(technique)Apollo and contamination control. Boeing's role
(technique)Bacteriology of clean rooms
(technique)Biological decontamination of a spacecraft system
(technique)Checklist of good contamination control practices fro
(technique)Class 100 clean room program, preparation and initial
(technique)Clean room personnel
(technique)Contamination control
(technique)Control of microbiological hazards in the laboratory
(technique)Critique of current spacecraft sterilization standard
(technique)Description of the model assembly sterilization for t
(technique)Design and development of a bio-isolator suit system
(technique)Detection of bacteria and viruses in liquids
(technique)Detection of low levels of microbial contamination on
(technique/Development and test of flexible film coupon strips fo
(technique)Ecology and thermal inactivation of microbes in and o
(technique)Ecology and thermal inactivation of microorganisms in and o
(technique)Evaluation of filters to sterilize liquids and gases
(technique)Feasibility of thermoradiation for sterilization of s
(technique)For bioassay of spacecraft/Development of new and impr
(technique)For microbiology sampling on surfaces: Agar spray/An i
(technique)For space vehicles/STERILIZATION and decontamination
(technique)Handbook of biological aspects of spacecraft steriliz
(technique)Improved sonication method for removal of microorganis
(technique)Investigation of a sono-chemical approach in steriliz
Investigation of a sono-chemical approach in sterilization
Laminar flow for the neurosurgical operating room. Technique
Limitations of initiation of germination of bacterial method
Method for microbial surface sampling: Development and
Method for obtaining free bacterial spores of Bacillus
Microbial cell recovery from solid materials
Microbiological exploration of the stratosphere
Microbiological investigation of selected spacecraft
Microbiological sampling of surfaces
NASA standard procedures for the microbiological examination
Practical procedures for microbial decontamination
Preparation and assay of T4 bacteriophage
Production of low concentration particulate aerosols
Properties of heat-resistant and heat-sensitive strains
Proper use of biological indicators in sterilization
Rapid identification of microorganisms by continuous
Recent developments in planetary quarantine
Recovery of known numbers of microorganisms from surfaces
Reduction of microbial dissemination and germicidal agents
Reduction of microbial shedding from humans
Release of microorganisms from solid materials
Review of naturally occurring interior microbial contamination
Services provided in support of the planetary quarantine
Services provided in support of the planetary quarantine
Services provided in support of the planetary quarantine
Services provided in support of the planetary quarantine
Simultaneous estimation by partial totals for compartments
Skin carriage of bacteria in the human
Spacecraft sterilization – grand requirements
Spacecraft sterilization: Specific examples
Sterilization assembly development laboratory (SADL)
Sterilization of interplanetary vehicles
Stochastic sterilization model
Studies on ethylene oxide-Freon 12 decontamination and
Surface sampling with an agar spray
Synergistic characteristics of thermoradiation sterilization
Systems approach to contamination control
Testing a sterilizable liquid propulsion system
Thermal destruction of microorganisms
Traditional concepts for contamination control
Use of laminar airflow in microbiology
Vacuum probe for removing organisms for counting
Visual monitoring as an assay
Techniques associated with the decontamination and sterilization
Experimental study of sterile assembly
Techniques for planetary quarantine
Techniques for recovery from interiors of solids
Techniques for recovery from surfaces
Survey of microbiological techniques
techniques for space vehicles/Sterilization and decontamination 232
Techniques for sterile insertion and repair of spacecraft 1188
Techniques for the limitation of biological loading of spacecraft 730
Techniques for the prevention of contamination of the planets by techniques in planetary quarantine and spacecraft sterilization 235
techniques in planetary quarantine/Study of analytical techniques in planetary quarantine/Study of analytical 1062
techniques in spacecraf/Importance of sterilization 1073
techniques/Microbiological barrier 482
techniques/Spacecraft cleaning and decontamination 1086
techniques/Sterilization 911
techniques to low levels of contamination/Sensitivity of bacteri 442
(technology)Advances in large-volume air sampling 255
(technology)Analytical basis for assaying buried biological cont 644
(technology)Apollo and contamination control. Rocketdyne's role 181
(technology)ATP assay of terrestrial soils - a test of exobiolog 793
(technology)Avionics clean room 210
(technology)Biological monitoring of capsule mechanical training 1163
(technology)Capsule system advanced development sterilization pr 538
(technology)Clean assembly and sterilization laboratory 206
(technology)Clean room 1222
technology/Clean room in space 793
(technology)Comparative evaluation of methods for search for lif 576
(technology)Contamination control and sterilization in space pro 823
(technology)Contamination control handbook 1034
(technology)Continuation of development of typical Mars landing 47
(technology)Continuation of development of typical Mars landing 48
(technology)Design requirements for laminar airflow clean rooms 694
(technology)Development and application of system model for spac 319
(technology)Discussion of possible contamination of space with t 152
(technology)Ecology and thermal inactivation of microbes in and 981
(technology)Ecology and thermal inactivation of microbes in and 983
(technology)Environmental microbiology as related to planetary q 86
(technology)Environmental microbiology as related to planetary q 88
(technology)Ethylene oxide sterilization, current review of prin 637
(technology)Evaluation of alcohol sporulation method 594
(technology)Experimental heat chamber for sterilization of large 103
(technology)Experimental heat chamber for sterilization of large 104
(technology)Experimental heat chamber for sterilization of large 107
(technology)Experimental heat chamber for sterilization of large 108
(technology)Feasibility of liquid sterile insertion 1165
Technology feasibility spacecraft. Sterilization and bioassay 735
Technology feasibility spacecraft thermal math modeling terminal 571
Technology feasibility spacecraft thermal math modeling terminal 572
(technology)5 year forecast for contamination control 404
(technology)Heat sterilizable battery development 708
(technology)Heat sterilizable impact resistant cell development 79
(technology)HEPA:LAF environmental control at Riker laboratories 415
(technology)Immediate and future challenges to contamination con 314
<table>
<thead>
<tr>
<th>Technology</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved method for pouring Rodac plates</td>
<td>146</td>
</tr>
<tr>
<td>Improved model of the vacuum probe</td>
<td>796</td>
</tr>
<tr>
<td>Interactions between radiation fields from RTGs and</td>
<td>780</td>
</tr>
<tr>
<td>Investigation of methods for sterilization of pottin</td>
<td>1201</td>
</tr>
<tr>
<td>Microbiological flora of the Gemini IX spacecraft</td>
<td>568</td>
</tr>
<tr>
<td>Microbiological methods of testing the atmosphere</td>
<td>1233</td>
</tr>
<tr>
<td>Microbiological studies conducted in a vertical laminar flow clean room</td>
<td>722</td>
</tr>
<tr>
<td>Monitoring of laminar downflow clean rooms</td>
<td>1269</td>
</tr>
<tr>
<td>Paraformaldehyde for surface sterilization and detox</td>
<td>1172</td>
</tr>
<tr>
<td>Principles and applications of laminar-flow devices</td>
<td>727</td>
</tr>
<tr>
<td>Procedures for microbiological examination of space</td>
<td>352</td>
</tr>
<tr>
<td>Quality assurance monitoring of microbiological aspects</td>
<td>413</td>
</tr>
<tr>
<td>Quality assurance requirements manual for planetary</td>
<td>755</td>
</tr>
<tr>
<td>Reduction of microbial dissemination</td>
<td>821</td>
</tr>
<tr>
<td>Research and advanced development</td>
<td>606</td>
</tr>
<tr>
<td>RTG radiation test laboratory</td>
<td>179</td>
</tr>
<tr>
<td>Services provided in support of planetary quarantine</td>
<td>360</td>
</tr>
<tr>
<td>Spacecraft sterilization</td>
<td>45</td>
</tr>
<tr>
<td>Sterile access studies in pilot assembly sterilization</td>
<td>344</td>
</tr>
<tr>
<td>Sterilization</td>
<td>281</td>
</tr>
<tr>
<td>Study of application of laminar flow ventilation to</td>
<td>392</td>
</tr>
<tr>
<td>Study program on development of mathematical model(s)</td>
<td>760</td>
</tr>
<tr>
<td>Systems analysis and clean room monitoring for plane</td>
<td>1044</td>
</tr>
<tr>
<td>Systems analysis and clean room monitoring for plane</td>
<td>1046</td>
</tr>
<tr>
<td>Unmanned spacecraft RTG shield optimization study</td>
<td>1148</td>
</tr>
<tr>
<td>Teflon film at high temperatures</td>
<td>145</td>
</tr>
<tr>
<td>Absorption and desorption of ethylene oxide</td>
<td>499</td>
</tr>
<tr>
<td>Temperature and humidity conditions</td>
<td>1125</td>
</tr>
<tr>
<td>Temperature and humidity conditions</td>
<td>1126</td>
</tr>
<tr>
<td>Temperature</td>
<td>1246</td>
</tr>
<tr>
<td>Automatic ethylene oxide decontamination system</td>
<td>1097</td>
</tr>
<tr>
<td>Cryobiologist's conjecture of planetary life</td>
<td>1061</td>
</tr>
<tr>
<td>Defining Mars' atmosphere - goal for the early mission</td>
<td>1088</td>
</tr>
<tr>
<td>Dry heat destruction rates for microorganisms on the surface of Mars</td>
<td>884</td>
</tr>
<tr>
<td>Environmental microbiology as related to planetary boundary conditions</td>
<td>86</td>
</tr>
<tr>
<td>Ethylene oxide sterilization current review of principles</td>
<td>637</td>
</tr>
<tr>
<td>Ethylene oxide sterilization current review of principles</td>
<td>1014</td>
</tr>
<tr>
<td>Temperature growth characteristics of clostridia/Low</td>
<td>1014</td>
</tr>
<tr>
<td>Investigation in assessing microbial contamination on flat surface</td>
<td>1241</td>
</tr>
<tr>
<td>Investigation of methods for sterilization of pottin</td>
<td>1199</td>
</tr>
<tr>
<td>Investigation of methods for sterilization of pottin</td>
<td>1201</td>
</tr>
<tr>
<td>Literature review of the compatibility of commercial sterilization</td>
<td>1026</td>
</tr>
<tr>
<td>Matrix test of sterilizable piece-parts</td>
<td>757</td>
</tr>
<tr>
<td>Temperature on Mars and Venus/Exospheric</td>
<td>555</td>
</tr>
<tr>
<td>Temperature on the viability of some spores and soil organisms</td>
<td>251</td>
</tr>
<tr>
<td>Planetary probe-origin of atmosphere of Venus</td>
<td>797</td>
</tr>
<tr>
<td>Preliminary sublimation studies</td>
<td>1207</td>
</tr>
<tr>
<td>Temperature profiles/Integrated lethality of sterilization</td>
<td>239</td>
</tr>
<tr>
<td>Temperature relationships</td>
<td>900</td>
</tr>
<tr>
<td>Research study to definitize a bioisolator suit system</td>
<td>420</td>
</tr>
</tbody>
</table>
Search for life on Mars - where we stand today 562
Soil moisture, relative humidity, and microbial abu 169
Spacecraft component survivability during entry int 1155
Supposed role of microbiological aerosol stabilizer 1132
Surface environment and possible biology of Mars 1029
Survival of microorganisms under simulated space co 155
Water on Venus? 690

Soil moisture, relative humidity, and microbial abun 1155
Spacecraft component survivability during entry int 1132
Surface environment and possible biology of Mars 1029
Survival of microorganisms under simulated space co 155
Water on Venus? 690
Thermal inactivation of microbes in and on interplanetary space

Thermal inactivation of microbes in and on interplanetary space

Thermal inactivation of microbes in and on interplanetary space

Thermal inactivation of microbes in and on interplanetary space

Thermal inactivation of microbes in and on interplanetary space

Thermal inactivation of microbes in and on interplanetary space

Thermal inactivation rate of bacterial spores/Effect of cell moi

Thermal kill of viable organisms during Mars atmospheric entry/S

Thermal math modeling terminal sterilization cycle/Technology fe

Thermal modeling to space vehicle sterilization/Application of

Thermal radiative characteristics of viable microorganisms

Thermal resistance study for combined method of ste

Thermal resistance of microorganisms to dry heat: Design of appa

Thermal sterilization compatibility of growth media for extrate

Thermal sterilization effects of decontamination and sterilizat

Thermal sterilization of microorganisms/Rational model for

Thermal vacuum effects on spacecraft polymeric materials/Sterili

Thermal vacuum exposures/Spacecraft polymeric material interacti

Thermal vacuum on spacecraft polymeric products

Thermoradiation as a means of bacterial sterilization

Thermoradiation development of two closely controlled humidity

Thermoradiation for sterilization of spacecraft - preliminary re

Thermoradiation inactivation of dry Bacillus subtilis var. niger

Thermoradiation sterilization of spacecraft using Cobalt 60/Feas

Thermoradiation sterilization/Study of the effectiveness of

Thermoradiation sterilization/Synergistic characteristics of

time and temperature in assessing microbial contamination on fla

(Tolerance) Dry heat resistance of spores of Bacillus subtilis va

(Tolerance) Effect of a high vacuum on microorganisms

(Tolerance) Heat and radiation resistance and activation of spore

(Tolerance) Microbial survival in deep space environment

(Tolerance) Potential effects of recent findings on spacecraft st

(Tolerance) Resistance of microorganisms to high vacuum

(Tolerance) Resistivity of microorganisms to inactivation by dry

(Tolerance) Sterilization of spacecraft

(Tolerance) Studies of spacecraft sterilization parameters

200
Surveyor sterilization. Further compatibility studies

Problem areas with ethylene oxide sterilization

Training needs in planetary quarantine

Short courses on basic environmental microbiology

Use of laminar flow for environmental control

Heat injury of Bacillus subtilis spores at ultrahigh temperatures

Thermal inactivation characteristics of Bacillus subtilis

Ultrahigh vacuum and outer space: kinetic comparison/Microbial studies

Survival of cocci after ultrahigh vacuum

High vacuum sterilization conversion

Ultrahigh vacuum on Bacillus subtilis var. niger/Effect of ultrahigh vacuum or at atmospheric pressure/Resistivity of spores

Study of viability of microorganisms in ultrahigh vacuum

Vacuum sampling device/Development of an ultrasonic sampling device

Sterilizing effects of high intensity airborne ultrasound

Development of concepts for improved spacecraft sterilization

For removing viable microorganisms from surfaces/Feasibility studies

Improved sonication method for removal of microorganisms

Investigation of a sono-chemical approach in sterilization

Investigation of a sono-chemical approach in sterilization

Investigation of a sono-chemical approach in sterilization

Investigation of a sono-chemical approach in sterilization

Study of viability of microorganisms in ultrahigh vacuum

Microbial contamination on surface

Assessment of microbial contamination on surfaces of ultrasonic waves

Sterilizing effects of high intensity airborne ultrasound

Development of concepts for improved spacecraft sterilization

Ultrasonic for removing viable microorganisms from surfaces/Feasibility studies

Improved sonication method for removal of microorganisms

Investigation of a sono-chemical approach in sterilization

Investigation of a sono-chemical approach in sterilization

Investigation of a sono-chemical approach in sterilization

Investigation of a sono-chemical approach in sterilization

Planetary quarantine presentation

Services provided in support of the planetary quarantine

Study of the biological cleanability of surfaces using ultraviolet and gamma radiation while exposed to ultrahigh vacuum

Survival of selected microorganisms in high ultraviolet flux

Comparative evaluation of methods for selecting life on Mars - where we stand today

Thermal radiative characteristics of viable microorganisms

Ultrahigh vacuum and microorganisms

Ultraviolet on the survival of bacteria airborne in simulated Martian environment

Ultraviolet irradiation/Effect of simulated Martian environment on cer
vacuum effects in the sterilization of microorganisms/Analysis of vacuumEthylene oxide-Freon 12 decontamination procedure: Reacti
vacuum/Inactivation and division delay of E. coli B/r by combined vacuum on Bacillus subtilis var. niger/Effect of ultra-high vacuum on bacterial cells/Effects of simulated space vacuum on microorganisms/Effect of a high vacuum on viability of microorganisms/Effect of ultrahigh vacuum or at atmospheric pressure/Resistivity of spores to ultravit.
(vacuum)Preliminary sublimation studies Vacuum probe for removing microorganisms for counting vacuum probe: new approach to microbiological sampling of surface
Vacuum probe sampler (vacuum probe)Services provided in support of the planetary quara vacuum probe surface sampler/Laboratory evaluation of the plastic vacuum probe surface samples/Testing and fabrication of plastic (vacuum probe)Techniques for the limitation of biological loading vacuum/Survival of Antarctic desert soil bacteria exposed to vari (vacuum)Survival of bacterial spores under some simulated lunar vacuum/Survival of microorganisms in desert soil exposed to five (vacuum)Survival of microorganisms under simulated space conditio (vacuum)Unmanned spacecraft RTG shield optimization study vacuum/Viability of microorganisms in ultra-high value investigations/Status report on D, z, and A_w
Venus atmosphere on polymeric materials/Effects of simulated Venus atmosphere/Simulation of the Venus/Atmospheres of Mars and (Venus)Estimation of planetary contamination probabilities due to Venus/Exospheric temperatures on Mars and

203
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venus exploration/Spacecraft-sterilization issue may effect pace</td>
<td>37</td>
</tr>
<tr>
<td>Venus/Ice caps on</td>
<td>689</td>
</tr>
<tr>
<td>Venus 1972 mission/Preliminary quarantine analysis of a possible</td>
<td>233</td>
</tr>
<tr>
<td>(Venus)Planetary quarantine and space vehicle sterilization</td>
<td>234</td>
</tr>
<tr>
<td>Venus/Problems posed by the planet</td>
<td>836</td>
</tr>
<tr>
<td>(Venus)Status review of technology developments for spacecraft st</td>
<td>260</td>
</tr>
<tr>
<td>(Venus)The space environment</td>
<td>387</td>
</tr>
<tr>
<td>(viability)Absorption-desorption of water by bacterial spores and</td>
<td>1023</td>
</tr>
<tr>
<td>(viability)Advances in large-volume air sampling</td>
<td>255</td>
</tr>
<tr>
<td>(viability)Analysis of microbial release probabilities</td>
<td>325</td>
</tr>
<tr>
<td>(viability)Analytical basis for assaying buried biological contam</td>
<td>644</td>
</tr>
<tr>
<td>(viability)Analytical basis for estimation of planetary contamina</td>
<td>326</td>
</tr>
<tr>
<td>(viability)Bacterial response to soil environment</td>
<td>96</td>
</tr>
<tr>
<td>(viability)Bayesian analysis for an exponential surveillance mode</td>
<td>883</td>
</tr>
<tr>
<td>(viability)Behavior of certain soil microorganisms in the &quot;artifi</td>
<td>661</td>
</tr>
<tr>
<td>(viability)Biological effectiveness of solar electromagnetic radi</td>
<td>702</td>
</tr>
<tr>
<td>(viability)Biological evaluation of the biodetection grinder</td>
<td>1090</td>
</tr>
<tr>
<td>(viability)Biological losses and the quarantine policy for Mars</td>
<td>1140</td>
</tr>
<tr>
<td>(viability)Biostatistics and space exploration: microbiology and</td>
<td>219</td>
</tr>
<tr>
<td>(viability)Characterization of bacterial populations by means of</td>
<td>1153</td>
</tr>
<tr>
<td>(viability)Comparison of microbial contamination levels among hos</td>
<td>377</td>
</tr>
<tr>
<td>(viability)Continuation of development of typical Mars landing ca</td>
<td>47</td>
</tr>
<tr>
<td>(viability)Cryobiologist's conjecture of planetary life</td>
<td>1061</td>
</tr>
<tr>
<td>(viability)Design of thermal destruction apparatus</td>
<td>894</td>
</tr>
<tr>
<td>(viability)Die-off of microbial contamination</td>
<td>1236</td>
</tr>
<tr>
<td>(viability)Dry heat destruction rates of microorganisms on surfac</td>
<td>895</td>
</tr>
<tr>
<td>(viability)Dry heat destruction rates of microorganisms on surfac</td>
<td>1239</td>
</tr>
<tr>
<td>(viability)Dry heat resistance of spores of <em>Bacillus subtilis</em> var</td>
<td>145</td>
</tr>
<tr>
<td>(viability)Effect of a high vacuum on microorganisms</td>
<td>578</td>
</tr>
<tr>
<td>(viability)Effect of diurnal freeze-thawing on survival and growt</td>
<td>1302</td>
</tr>
<tr>
<td>(viability)Effect of low numbers of microorganisms on samples ass</td>
<td>1091</td>
</tr>
<tr>
<td>(viability)Effect of temperature and gas velocity on the dry heat</td>
<td>396</td>
</tr>
<tr>
<td>(viability)Effect of ultra-high vacuum on <em>Bacillus subtilis</em> var.</td>
<td>794</td>
</tr>
<tr>
<td>(viability)Effect of ultraviolet radiation upon microorganisms an</td>
<td>382</td>
</tr>
<tr>
<td>(viability)Effect of various gas atmospheres on destruction of mi</td>
<td>897</td>
</tr>
<tr>
<td>(viability)Effects of aeolian erosion on microbial release from s</td>
<td>450</td>
</tr>
<tr>
<td>(viability)Effects of high intensity visible and ultraviolet ligh</td>
<td>188</td>
</tr>
<tr>
<td>(viability)Effects of hyperoxia upon microorganisms. Membrane cul</td>
<td>134</td>
</tr>
<tr>
<td>(viability)Environmental microbiology as related to planetary qua</td>
<td>86</td>
</tr>
<tr>
<td>(viability)Environmental microbiology as related to planetary qua</td>
<td>87</td>
</tr>
<tr>
<td>(viability)Environmental microbiology as related to planetary qua</td>
<td>887</td>
</tr>
<tr>
<td>(viability)Estimation of particulate loads on components of devic</td>
<td>273</td>
</tr>
<tr>
<td>(viability)Evaluation of microbiological filters for liquids and</td>
<td>585</td>
</tr>
<tr>
<td>(viability)Evaluation of quantal response model with estimated co</td>
<td>228</td>
</tr>
<tr>
<td>(viability)Evaluation of quantal response model with variable con</td>
<td>223</td>
</tr>
<tr>
<td>(viability)Germicidal activity of ethylene oxide</td>
<td>822</td>
</tr>
<tr>
<td>(viability)Growth of bacteria in soils from Antarctic dry valley</td>
<td>168</td>
</tr>
<tr>
<td>(viability)Heat and radiation resistance and activation of spores</td>
<td>1013</td>
</tr>
<tr>
<td>(viability)Influence of various pretreatments [carrier, desiccati</td>
<td>283</td>
</tr>
</tbody>
</table>
(viability) Relative frequency distribution of $D_{125}$ values for sp
(viability) Release of microbial contamination from fractured soil
(viability) Research and development in environmental microbiology
(viability) Resistivity of microorganisms to thermal inactivation
(viability) Response of spore-forming vs. nonspore-forming bacteria
(viability) Response of viruses to environmental exposure
(viability) Search for life on Mars - where we stand today
(viability) Services provided in support of the planetary quarantine
(viability) Soil studies - Desert microflora. Desert soil algae
(viability) Spacecraft component survivability during entry into Mars
(viability) Sterilization
(viability) Sterilization. Selected bibliography from the literature
(viability) Sterilizing action of gaseous ethylene oxide. The effects
(viability) Sterilizing effects of high intensity airborne sonic energy
(viability) Stochastic sterilization model
(viability) Studies on trace elements in the sporulation of bacteria
(viability) Studies with microorganisms and plants under simulated conditions
(viability) Study of application of laminar flow ventilation to operations
(viability) Study of aseptic maintenance by pressurization
(viability) Surface sampling with an agar spray technique
(viability) Survival of microorganisms under simulated conditions
(viability) Survival of microorganisms in a simulated Martian environment
(viability) Survival of microorganisms in desert soil exposed to factors influencing recovery
(viability) Thermal destruction of microorganisms
(viability) Types of biological indicators used in monitoring sterilization
(viability) Viable and nonviable contamination/instrumentation and methodology
(viable) Biodetection grinder
(viable) Viable contamination by a class 100 laminar flow clean room/Evaluation
(viable) Viable germs in outer space/Possibility of the spreading of viable microorganisms deposited on the moon by unmanned lunar probes
(viable) Viable microorganisms Development of quality assurance requirements
(viable) Viable microorganisms from solid material after a hard impact
(viable) Viable microorganisms from surfaces/Factors influencing the recovery
(viable) Viable microorganisms from surfaces/Feasibility of using ultrasound
(viable) Viable microorganisms in nitrogen gas/Enumeration of viable microorganisms
(viable) Viable microorganisms/Thermal radiative characteristics
(viable) Viable organism penetration of bio-barrier meteoroid holes/Flight tests
(viable) Viable organisms in a lunar sample/Search for viable organisms on Mars during the Mariner 1964 mission/Study of viable organisms

(Viking mission) Planetary quarantine: Recontamination phase

206
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implications of change in probability of microbial gr</td>
<td>329</td>
</tr>
<tr>
<td>Life detection systems</td>
<td>683</td>
</tr>
<tr>
<td>Planning, evaluation, and analytical studies in plane</td>
<td>333</td>
</tr>
<tr>
<td>Quarantine document system operations manual</td>
<td>337</td>
</tr>
<tr>
<td>Virucidal activity of Beta-propiolactone vapor. Effect on the eti virus aerosols/Filtration of submicron</td>
<td>254</td>
</tr>
<tr>
<td>Survival of microorganisms in space</td>
<td>184</td>
</tr>
<tr>
<td>Virucidal properties of dimethyl sulfoxide</td>
<td>500</td>
</tr>
<tr>
<td>(virus)Survival of microorganisms in space</td>
<td>703</td>
</tr>
</tbody>
</table>
z, and $A_\lambda$ value investigations/Status report on D,  
(z value) Dry heat resistance of spores of *Bacillus subtilis* var.  
(z value) Ecology and thermal inactivation of microbes in and on i  
(z value) Ecology and thermal inactivation of microbes in and on i  
(z value) Influence of spore moisture content on the dry heat resi  
(z values) Heat and radiation resistance and activation of spores
CORPORATE SOURCES

An alphabetical list of NASA centers, NASA contractors, and other sources of the material cited in this bibliography.

American Association for Contamination Control
6 Beacon Street
Boston, Massachusetts 02108

American Association for the Advancement of Science
1515 Massachusetts Avenue, N.W.
Washington, D.C. 20005

American Hospital Association
840 North Lake Shore Drive
Chicago, Illinois 60611

American Institute of Aeronautics and Astronautics
(Technical Information Service of)
750 Third Avenue
New York, N.Y. 10017

American Institute of Biological Sciences
3900 Wisconsin Avenue, N.W.
Washington, D.C. 20016

American Microscopical Society
Michigan State University
East Lansing, Michigan 48823

American Pharmaceutical Association
2215 Constitution Avenue, N.W.
Washington, D.C. 20037

American Public Health Association
1740 Broadway
New York, N.Y. 10019

American Society for Microbiology
1913 Eye Street, N.W.
Washington, D.C. 20006

American Society for Quality Control
161 West Wisconsin Avenue
Milwaukee, Wisconsin 53203

209
Ames Research Center  
National Aeronautics and Space Administration  
Moffet Field, California 94035

Avco Corporation  
Lowell Industrial Park  
Lowell, Massachusetts 01851

Battelle Memorial Institute  
505 King Avenue  
Columbus, Ohio 43201

Becton, Dickinson and Company  
Research Center  
P.O. Box 12016  
Research Triangle Park  
North Carolina 27709

Bell Aerospace Company  
Textron Inc.  
Sunnyvale, California 94088

The Bionetics Corporation  
18 Research Road  
Hampton, Virginia 23366

Biospherics, Incorporated  
4928 Wyaconda Road  
Rockville, Maryland 20852

The Boeing Company  
P.O. Box 3999  
Seattle, Washington 98124

Aero Space Medical Division  
Air Force Systems Command  
Brooks Air Force Base  
Texas 78235

University of California  
Berkeley, California 94704

Cambridge Research Laboratories  
United States Air Force  
L.G. Hanscom Field, Massachusetts 01730

Center for Disease Control  
Public Health Service  
U.S. Department of Health, Education and Welfare  
1600 Clifton Road, N.E.  
Atlanta, Georgia 30333

210
Center for Disease Control
Sterilization Control Laboratory
U.S. Public Health Service
P.O. Box 273
Cape Kennedy, Florida 23920

Center for Disease Control
Phoenix Laboratories
Public Health Service
U.S. Department of Health, Education and Welfare
4402 North Seventh Street
Phoenix, Arizona 85014

Cincinnati Research Laboratories
Food and Drug Administration
U.S. Department of Health, Education and Welfare
1090 Tusculum Avenue
Cincinnati, Ohio 45226

Colorado State University
Fort Collins, Colorado 80521

Consultants and Designers, Inc.
55 Fifth Avenue
New York, N.Y. 10003

Dow Chemical Company
Biohazard Group
Pitman-Moore Division
Zionsville, Indiana 46206

Dudley Observatory
New York State Department of Health
Albany, N.Y. 12201

Dynamic Science Corporation
1445 Huntington Drive
South Pasadena, California 91030

Eagle-Picher Industries, Inc.
Joplin, Missouri 64801

Electro-Mechanical Research, Inc.
Princeton, New Jersey 08540

Exotech Systems, Inc.
5205 Leesburg Pike
Falls Church, Virginia 22041

Florida State University
Tallahassee, Florida 32306
General Dynamics/Convair Aerospace Division
San Diego, California 92112

General Electric Company
Re-entry and Environmental Systems Division
3198 Chestnut Street
Philadelphia, Pennsylvania 19101

The George Washington University
Department of Medical and Public Affairs
Biological Sciences Communication Project
2001 S Street, N.W.
Washington, D.C. 20009

Goddard Space Flight Center
National Aeronautics and Space Administration
Greenbelt, Maryland 20771

Grumman Aerospace Corporation
South Oyster Bay Road
Bethpage, New York 11714

Hardin-Simmons University
Abilene, Texas 79601

Hayes International Corporation
P.O. Box 2287
Huntsville, Alabama 35801

Hughes Aircraft Company
Aerospace Group
Centinela Avenue and Teale Street
Culver City, California 90230

IIT Research Institute
10 West 35th Street
Chicago, Illinois 60616

University of Illinois
Department of Microbiology
Urbana, Illinois 61803

Institute of Biology
41 Queens Gate
London SW 7
England

Institute of Electrical and Electronic Engineers
345 East 47th Street
New York, N.Y. 10017
Institute of Environmental Sciences
940 East Northwest Highway
Mount Pleasant, Illinois 60056

Instrument Society of America
530 William Penn Place
Pittsburgh, Pa. 15219

Jet Propulsion Laboratory
California Institute of Technology
4800 Oak Grove Drive
Pasadena, California 91103

Joint Publications Research Service
1000 North Glebe Road
Arlington, Virginia 22201

Langley Research Center
National Aeronautics and Space Administration
Langley Station
Hampton, Virginia 23665

Lewis Research Center
National Aeronautics and Space Administration
Cleveland, Ohio 44135

Library of Congress
Aerospace Technology Division
Washington, D.C. 20540

Litton Industries
360 North Crescent Drive
Beverly Hills, California 90210

Lockheed Missiles and Space Company
Sunnyvale, California 94088

Manufacturing Chemists Association, Inc.
1825 Connecticut Avenue, N.W.
Washington, D.C. 20009

George C. Marshall Space Flight Center
National Aeronautics and Space Administration
Marshall Space Flight Center, Alabama 35812

Martin Marietta Corporation
Denver, Colorado 80201

Massachusetts Institute of Technology
Cambridge, Massachusetts 02139

213