

Guidance for Industry

Sterile Drug Products Produced by Aseptic Processing — Current Good Manufacturing Practice

**U.S. Department of Health and Human Services
Food and Drug Administration
Center for Drug Evaluation and Research (CDER)
Center for Biologics Evaluation and Research (CBER)
Office of Regulatory Affairs (ORA)**

**September 2004
Pharmaceutical CGMPs**

Guidance for Industry

Sterile Drug Products Produced by Aseptic Processing — Current Good Manufacturing Practice

*Additional copies are available from:
Office of Training and Communication
Division of Drug Information, HFD-240
Center for Drug Evaluation and Research
Food and Drug Administration
5600 Fishers Lane
Rockville, MD 20857
(Tel) 301-827-4573
<http://www.fda.gov/cder/guidance/index.htm>*

or

*Office of Communication, Training and
Manufacturers Assistance, HFM-40
Center for Biologics Evaluation and Research
Food and Drug Administration
1401 Rockville Pike, Rockville, MD 20852-1448
<http://www.fda.gov/cber/guidelines.htm>.
(Tel) Voice Information System at 800-835-4709 or 301-827-1800*

**U.S. Department of Health and Human Services
Food and Drug Administration
Center for Drug Evaluation and Research (CDER)
Center for Biologics Evaluation and Research (CBER)
Office of Regulatory affairs (ORA)**

**September 2004
Pharmaceutical CGMPs**

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
II.	BACKGROUND	2
A.	Regulatory Framework	2
B.	Technical Framework.....	2
III.	SCOPE	3
IV.	BUILDINGS AND FACILITIES	4
A.	Critical Area – Class 100 (ISO 5)	5
B.	Supporting Clean Areas	7
C.	Clean Area Separation	7
D.	Air Filtration	8
1.	Membrane	8
2.	High-Efficiency Particulate Air (HEPA)	8
E.	Design.....	10
V.	PERSONNEL TRAINING, QUALIFICATION, & MONITORING.....	12
A.	Personnel.....	13
B.	Laboratory Personnel.....	15
C.	Monitoring Program.....	15
VI.	COMPONENTS AND CONTAINER/CLOSURES.....	15
A.	Components.....	16
B.	Containers/Closures.....	17
1.	Preparation.....	17
2.	Inspection of Container Closure System.....	18
VII.	ENDOTOXIN CONTROL.....	19
VIII.	TIME LIMITATIONS.....	20
IX.	VALIDATION OF ASEPTIC PROCESSING AND STERILIZATION	20
A.	Process Simulations	20
1.	Study Design	21
2.	Frequency and Number of Runs	22
3.	Duration of Runs.....	22
4.	Size of Runs.....	23
5.	Line Speed.....	23
6.	Environmental Conditions	24
7.	Media	24
8.	Incubation and Examination of Media-Filled Units	24
9.	Interpretation of Test Results.....	26
B.	Filtration Efficacy	27

C. Sterilization of Equipment, Containers, and Closures	28
1. Qualification and Validation	29
2. Equipment Controls and Instrument Calibration	30
X. LABORATORY CONTROLS	31
A. Environmental Monitoring	32
1. General Written Program	32
2. Establishing Levels and a Trending Program	33
3. Disinfection Efficacy.....	34
4. Monitoring Methods.....	34
B. Microbiological Media and Identification	35
C. Prefiltration Bioburden	36
D. Alternate Microbiological Test Methods	36
E. Particle Monitoring.....	36
XI. STERILITY TESTING	37
A. Microbiological Laboratory Controls	38
B. Sampling and Incubation	38
C. Investigation of Sterility Positives	39
XII. BATCH RECORD REVIEW: PROCESS CONTROL DOCUMENTATION	42
APPENDIX 1: ASEPTIC PROCESSING ISOLATORS.....	44
APPENDIX 2: BLOW-FILL- SEAL TECHNOLOGY.....	49
APPENDIX 3: PROCESSING PRIOR TO FILLING AND SEALING OPERATIONS....	52
REFERENCES.....	54
RELEVANT GUIDANCE DOCUMENTS.....	55
GLOSSARY.....	56

Guidance for Industry¹

Sterile Drug Products Produced by Aseptic Processing — Current Good Manufacturing Practice

This guidance represents the Food and Drug Administration's (FDA's) current thinking on this topic. It does not create or confer any rights for or on any person and does not operate to bind FDA or the public. You can use an alternative approach if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative approach, contact the FDA staff responsible for implementing this guidance. If you cannot identify the appropriate FDA staff, call the appropriate number listed on the title page of this guidance.

I. INTRODUCTION

This guidance is intended to help manufacturers meet the requirements in the Agency's current good manufacturing practice (CGMP) regulations (21 CFR parts 210 and 211) when manufacturing sterile drug and biological products using aseptic processing. This guidance replaces the 1987 *Industry Guideline on Sterile Drug Products Produced by Aseptic Processing (Aseptic Processing Guideline)*. This revision updates and clarifies the 1987 guidance.

For sterile drug products subject to a new or abbreviated drug application (NDA or ANDA) or a biologic license application (BLA), this guidance document should be read in conjunction with the guidance on the content of sterile drug applications entitled *Guideline for the Submission of Documentation for Sterilization Process Validation in Applications for Human and Veterinary Drug Products* (Submission Guidance). The Submission Guidance describes the types of information and data that should be included in drug applications to demonstrate the efficacy of a manufacturer's sterilization process. This guidance complements the Submission Guidance by describing procedures and practices that will help enable a sterile drug manufacturing facility to meet CGMP requirements relating, for example, to facility design, equipment suitability, process validation, and quality control.

FDA's guidance documents, including this guidance, do not establish legally enforceable responsibilities. Instead, guidances describe the Agency's current thinking on a topic and should be viewed only as recommendations, unless specific regulatory or statutory requirements are cited. The use of the word *should* in Agency guidances means that something is suggested or recommended, but not required.

¹ This guidance was developed by the Office of Compliance in the Center for Drug Evaluation and Research (CDER) in cooperation with the Center for Biologics Evaluation and Research (CBER) and the Office of Regulatory Affairs (ORA).

Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.