



Goddard Procedural Requirements (GPR)

DIRECTIVE NO. GPR 4100.1B **APPROVED BY Signature:** Original Signed By
EFFECTIVE DATE: December 18, 2019 **NAME:** David A. Reth
EXPIRATION DATE: December 18, 2024 **TITLE:** Director Of Management Operations Directorate

COMPLIANCE IS MANDATORY

Responsible Office: 270/Information and Logistics Management Division

Title: Management of Shelf-Life for Critical End-Use Items

Revalidated with Administrative Changes 12/18/2019

PREFACE

P.1 PURPOSE

This procedure establishes the requirements for management and control of shelf-life items in order to maximize their issuance prior to deterioration and to ensure that material beyond its shelf life is not used on critical end-use items unless extended as described herein.

P.2 APPLICABILITY

This directive applies to all GSFC and Wallops duty stations, organizations and activities involved with the acquisition, purchase, storage and use of shelf-life items on critical end-use items in according with NPR4100.1F. This directive also applies to all GSFC contractors operating under the auspices of GSFC as directed by contractual, grant, and agreement documents. Shelf-life items not used on critical end use items will be managed as directed in NPR 4100.1. Organizations have six months from the publishing date to implement the procedures within this GPR.

- a. In this directive, all document citations are assumed to be the latest version unless otherwise noted.
- b. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term “shall.” The terms “may” or “can” denote discretionary privilege or permission; “should” denotes a good practice and is recommended but not required; “will” denotes expected outcome; and “are/is” denotes descriptive material.

P.3 AUTHORITY

[NPD 4100.1](#), Supply Support and Material Management Policy

P.4 APPLICABLE DOCUMENTS AND FORMS

- a. NPR 4100.1, NASA Supply Support and Material Management
- b. GPR 6400.1, Logistics Support

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- c. GPR 8500.3, Waste Management
- d. GSFC Form 20-74, Shelf-Life Item Extension
- e. Federal Specification PPP-C-186, Containers: Packaging and Packing for Drugs, Chemicals and Pharmaceuticals.

P.5 CANCELLATION

GPR 4100.1, Management of Shelf-life Items.

P.6 SAFETY

None

P.7 TRAINING

Shelf-life items are classified as non-extendable (Type I) or extendible (Type II). Shelf life indicates how long an item can be stored and remain useable for its intended purpose. Organizations managing shelf-life products used on critical end-use items will ensure that individuals working with the items have been briefed on and understand the requirements of this directive and their organization’s shelf-life management processes.

P.8 RECORDS

Record Title	Record Custodian	Retention
GSFC Form 20-74, Shelf-Life Item Extension or another documented means, such as a technical memorandum approved by PDL, PM, CS, CSO or Branch Chief	Organization controlling the critical end-use item	Records for programs or projects: * <u>NRRS 8/103 – Program and Project Records</u> . Destroy/delete between 5 and 30 years after program/project termination. Records for other activities: * <u>NRRS 4/6 – Mechanized Property and Supply Records</u> . Destroy when 2 years old.

**NRRS NPR1441.1 – NASA Records Retention Schedules*

P.9 MEASUREMENT/VERIFICATION

Internal and external inspections in the form of audits will be used to determine effectiveness of the shelf life process.

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PROCEDURES

1. Responsibilities

1.1 Organizations shall:

- a. (1) Ensure the product is not expired prior to use.
- (2) Identify shelf-life materials that will be used on critical end-use items (example: color code, write for flight use or non-flight use, segregation etc.).
- (3) Segregate shelf-life items that have expired from unexpired.
- (4) Extend shelf-life items, where applicable label product with new expiration date. Shelf life extensions must be recommended by the Materials Engineering Branch, Code 541, using GSFC Form 20-74 or another documented means, such as a technical memorandum and approved by the Product Design Lead, Project Manager, Chief Safety and Mission Assurance Officer (CSO), or Branch Chief. Extensions should only be granted in those cases that are coordinated with the manufacturer or material testing has shown the material has not degraded. Use Appendix C to determine if the shelf-life item is extendable.
- (5) Do not use the yellow label affixed to hazardous material to manage shelf-life items. The yellow labels affixed to hazardous material are HMMS labels.
- b. Ensure personnel understand the requirements for managing shelf-life materials used on critical end use items.
- c. Approve the extension of the shelf-life on critical end use items based on the recommendations of the Materials Engineering Branch, Code 541. Shelf-life items used on non-critical end use items will be managed in accordance with NPR 4100.1.

1.2. All Purchasing Agents will:

Ensure, whenever practicable, procurement documents and contracts contain the requirement for manufacturers and suppliers to mark the unit or container with the month and year of manufacture, shelf-life period, production and batch number on all shelf-life items procured from other than government sources of supply.

- a. Ensure, whenever practicable, any purchase of shelf-life material meet the following age on delivery requirements from the date of manufacture:

Shelf-Life Period	Maximum Age on Delivery
25 months or more	6 months
19 - 24 months	4 months
13 - 18 months	3 months
7 - 12 months	2 months
6 months or less	1 month

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DIRECTIVE NO.	<u>GPR 4100.1B</u>
EFFECTIVE DATE:	<u>December 18, 2019</u>
EXPIRATION DATE:	<u>December 18, 2024</u>

Page 4 of 9

1.3. Materials Engineering Branch (Code 541) will:

- a. Review extension requests/procedures from Center organizations.
- b. Perform shelf-life extension tests based on established procedures.
- c. Establish acceptance criteria for extensions of shelf life for critical end use items. For non-critical end use items, please refer to NPR4100.1F for further guidance.

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Appendix A – Definitions

- a. **Critical End-Use Item** – Any item having an application that is essential to the preservation of life, or essential to the performance of a major system (e.g., used for spaceflight or critical ground support hardware).
- b. **Date Manufactured.** The date the item, material, or commodity was fabricated, processed, produced or formed for use. For drugs, chemicals, and biological, the date of manufacture for products submitted to the Food and Drug Administration (FDA) for certification prior to release is the date of the official certification notice.
- c. **Hazardous Material (HAZMAT).** An item of supply consisting of material that because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.
- d. **Service Life.** A general term used to quantify the average or standard life expectancy of an item or equipment while in use.
- e. **Shelf-Life (SL).** The total period of time beginning with the date of manufacture, date of cure (for elastomeric and rubber products only), and terminated by the date by which an item must be used (expiration date) Shelf-life is not to be confused with service-life (see definition).
- f. **Shelf-Life Item** – Product for which a storage period and/or storage conditions are assigned to ensure satisfactory performance because of characteristics that may deteriorate or change during storage. A list of typical shelf-life codes is contained in Appendix C.
- g. **Type I Non-Extendible Shelf-Life Items.** Assets that have finite shelf life expiration date. Refer to the NPR4100.1F for additional information on Type I Non-Extendible Shelf-Life Item, Type II Extendible Shelf-Life Items. Assets with an extendible shelf life after testing has been accomplished to ensure the item is suitable for its intended purpose beyond the original shelf life date. Refer to the NPR4100.1F for additional information on Type II Extendible Shelf-Life Items.

DIRECTIVE NO.	<u>GPR 4100.1B</u>
EFFECTIVE DATE:	<u>December 18, 2019</u>
EXPIRATION DATE:	<u>December 18, 2024</u>

Page 6 of 9

Appendix B – Acronyms

CSO - Chief Safety & Mission Assurance Officer

FDA - Food and Drug Administration

GSFC - Goddard Space Flight Center

HAZMAT - Hazardous Material

SL – Shelf-Life

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DIRECTIVE NO. GPR 4100.1B
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Appendix C – Shelf-Life Codes

Shelf-Life Period	Type I	Type II	Age on Delivery (Months)
Non-Deteriorative No Shelf-Life Applies	0 (zero)	0 (zero)	N/A
01 Month	A	N/A	1
02 Months	B	N/A	1
03 Months	C	1	1
04 Months	D	N/A	1
05 Months	E	N/A	1
06 Months	F	2	1
09 Months	G	3	2
12 Months (1.00-Year)	H	4	2
15 Months (1.25-Years)	J	N/A	3
18 Months (1.50-Years)	K	5	3
21 Months (1.75-Years)	L	N/A	4
24 Months (2.00-Years)	M	6	4
27 Months (2.25-Years)	N	N/A	6
30 Months (2.50-Years)	P	N/A	6
36 Months (3.00-Years)	Q	7	6
48 Months (4.00-Years)	R	8	6
60 Months (5.00-Years)	S	9	6
72 Months (6.00-Years)	I	N/A	6
84 Months (7.00-Years)	T	N/A	6
96 Months (8.00-Years)	U	N/A	6

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120 Months (10-Years)	W	N/A	N/A
180 Months (15-Years)	Y	N/A	N/A
240 Months (20-Years)	Z	N/A	N/A
Shelf-Life Period Greater than 60 Months for Type II Extendible Items.	N/A	X	N/A

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CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	03/21/07	Initial Release
	03/05/12	1 year Administrative Extension
	02/06/13	1 year Administrative Extension
A	07/01/14	Substantially reworked to address shelf-life management of critical end use items.
A	03/28/19	Administratively extended for six months
B	12/18/19	Revalidated with administrative changes: Content reviewed/updated with new GPR template and inputs from Codes 541 and 273.

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