

Prepared By: D. Passarello

Approved By: D. Lowenstein

Signatures maintained on controlled copy in CAD QA office.

1.0 Purpose

To outline the basic requirements of an Age Sensitive Material control system.

2.0 Scope

The requirements of this document apply to age sensitive material that is manufactured or purchased by BNL for use in AGS.

3.0 Policy

- 3.1 Items or lots of material which are subject to deterioration due to aging/environment will be handled, packaged and stored in such a manner as to minimize these effects.
- 3.2 Items subject to wear-out failures or having limited calendar life will be identified and controlled in a manner that will preclude their use after the expiration of the calendar or operating life.
- 3.3 The methods of identification used shall be clear and legible, and shall not adversely affect the functional quality of the item.

4.0 References

AGS-OPM-9.2.3, Procedure for Chief Engineers to Certify the Conformance of Devices

5.0 Definitions

- 5.1 Age Sensitive Material (ASM) - Items whose characteristics make it subject to deterioration by exposure to oxygen, ozone, sunlight, heat, moisture and similar factors experienced in the normal course of manufacture, storage or use, and therefore require control and monitoring to assure that they are used prior to their expiration date. e.g. RTV rubber, epoxies, sealants, varnishes, insulating compounds, etc.
- 5.2 Calendar Life (Shelf Storage Life) - The maximum period of time, from date of manufacture, during which an age sensitive item is expected to retain its characteristic(s) as originally specified in the procurement document(s), when stored under normal conditions or otherwise specified special storage conditions.
- 5.3 Operating life - Period of time during which an item is expected to retain its characteristic(s) as originally specified, when operated under normal conditions or otherwise specified conditions.
- 5.4 Wear-out failures - Failures which occur as a result of deterioration processes or mechanical wear and whose probability of occurrence increases with time.

6.0 Procedure for Material with Limited Calendar Life

- 6.1 Procurement

The cognizant engineer or scientist (CE/CS), or designee, should identify, on the purchase request, those items that have a limited calendar life.

For procured assemblies, the requisitioner should identify which component(s) of the assembly are age sensitive. If BNL-QA-101, Seller Quality Assurance Requirements, is utilized, requirement 4.20 shall be selected when Age Sensitive Material (ASM) is procured.

6.2 Material Receipt

Upon receipt, ASM should be processed in an expeditious manner to assure optimum availability during its calendar life. Receiving personnel should verify that the ASM or accompanying paperwork contain a manufacture or cure date, and expiration date.

NOTE: It is common commercial practice that upon receipt a minimum of 75% of the useful calendar life should remain in order for the ASM to be acceptable.

An Age Control Label (Figure 1), or equivalent, shall be attached to each item upon acceptance. The receipt date and expiration date, as determined from information supplied by the vendor, should be entered on the Age Control Label. If the expiration date is already visible on the Age Sensitive Material's container(s) a BNL Age Control Label need not be affixed.

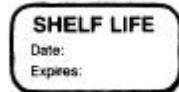


Figure 1
(Available through BNL inventory)

6.3 Material Handling and Storage

ASM shall be stored so as not to degrade the useful life of the material. When recommended by the vendor, appropriate storage conditions should be used to prolong the ASM usability. This may require storage protecting the material from heat, light or humidity, as required. Stored ASM should be reviewed for expiration date upon receipt of new material of the same type.

6.4 Disposition

Prior to use of ASM, the user should review the Age Control label to verify that the item is not past the expiration date. ASM found to be beyond its useful life shall be tagged and/or segregated from acceptable material, and held for disposition by authorized personnel.

6.4.1 With the approval of Division Management, in an emergency or if the item is expensive, appropriate tests can be performed on sample items to verify that the material is still usable. All such special situations shall be documented.

7.0 Procedure for Material with Limited Operating Life

7.1 Wear-out failures are those failures that occur generally near the end-of-life of an item and

are usually characterized by chemical or mechanical changes. These types of failures can be prevented by implementing a replacement maintenance schedule based on the known wear-out characteristic(s) of the specific item, e.g. incandescent light bulbs, motor brushes, power tubes, vacuum windows.

- 7.2 AGS-OPM-9.2.3, Procedure for Chief Engineers to Certify the Conformance of Devices, describes the process for requesting certification of AGS critical devices with limited operating life.