

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF A SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

No.: NR-0155-S-116-S

DATE: March 7, 2006

PAGE 1 OF 2

SOURCE TYPE: Radioluminous Lamp

MODEL: 11834818

MANUFACTURER/DISTRIBUTOR: Department of the Army
U.S. Army TACOM Life Cycle
Management Command
AMSTA-CS-CZR
(Previously U.S. Army Tank-
Automotive & Armaments Command)
Rock Island, IL 61299-7630

ISOTOPE:

MAXIMUM ACTIVITY:

Hydrogen-3

0.8 Curie (29.6 GBq)

LEAK TEST FREQUENCY:

As specified in the user's materials
license

PRINCIPAL USE: (R) Gas Sources

For use in Model M224 range indicator

CUSTOM SOURCE: YES NO

CUSTOM USER: U.S. Department of Defense

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DIAGRAM:

See Attachments 1 & 2.

REFERENCES:

The following supporting documents for the Model 11739555 radioluminous lamp are hereby incorporated by reference and are made a part of this registry document:

- Department of the Army letter dated March 20, 1995, requesting changes to specific certificates, and letters dated January 22, 2001, May 23, 2001, and March 24, 2004, with enclosures thereto.
- Department of the Army email received September 23, 2005, with enclosures thereto.
- Department of the Army facsimile dated December 12, 2005, with enclosures thereto.
- U.S. Department of the Army License No. 12-00722-06.

ISSUING AGENCY:

US Nuclear Regulatory Commission

Date: March 7, 2006

Reviewer: Tomas Herrera
Tomas Herrera

Date: March 7, 2006

Concurrence: John P. Jankovich
John P. Jankovich

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ATTACHMENT 1 OF 2

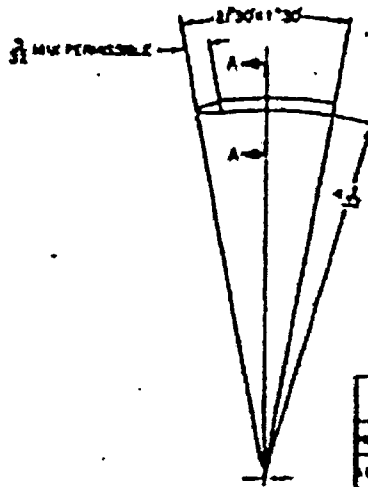
REQUIREMENTS

1. MARKING, LABELING AND SHIPPING OF PACKAGES AND CONTAINERS SHALL BE IN ACCORDANCE WITH DEPARTMENT OF ENERGY REGULATIONS IN THE 2002 REGULATORY GUIDE.
2. THERE SHALL BE NO EVIDENCE OF PHYSICAL FAILURE SUCH AS FRACTURING OR LIGHT LOSS DUE TO EXPOSURE TO THE LIGHT SOURCE TO $\pm 10^\circ\text{C}$ AND $\pm 10\% \text{RH}$ FOR A PERIOD OF 200 HOURS AT EACH TEMPERATURE.
3. SUBSEQUENT TO EXPOSURE THE LIGHT SOURCE IS TO BE FOR 4 HOURS AT ROOM TEMPERATURE. RADIOACTIVE CONTENT OF THE TUBES SHALL NOT EXCEED 0.05 MICROCURIE.
4. PRIOR TO BRIGHTNESS MEASUREMENTS, LAMPS SHALL BE ALLOWED TO EQUILIBRATE FOR A PERIOD OF 23 DAYS FROM MANUFACTURE.
5. FOLLOWING THE STABILIZATION PERIOD AND UP TO 80 DAYS FROM DATE OF MANUFACTURE, BRIGHTNESS MEASUREMENTS SHALL NOT SHOW A DROP IN EXCESS OF 2.5% WHEN MEASURING OVER ANY CONSECUTIVE 30 DAY PERIOD. FURTHER, THE FINAL BRIGHTNESS MEASUREMENT AT TIME OF ACCEPTANCE SHALL BE 500 MICROLAMBERTS MINIMUM.
6. TUBES TO BE FILLED WITH PRODUCTION GRADE TITANIUM DIOXIDE 99.999% PURE, LESS THAN 2% TITANIUM DIOXIDE, BALANCE OF CONSTITUENTS TO BE CHEMICALLY PURE. 0.50 CURIE MAX.
7. COLOR OF PROTOTYPE: SEE TABLE 1.
8. ^{60}Co MATERIAL CLASS, TYPE (CLASS A, 520 MIL WALL THICKNESS, 80-6-54).
SERT. 170075, 102750-03-0125 PER MIL-C-12750
SERT. 170075, 102750-03-0125 PER MIL-C-12750

IDENTIFICATION OF THE "REGISTERED SOURCE(S) OF SUPPLY" HEREON IS NOT TO BE CONSIDERED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE (TUBES).

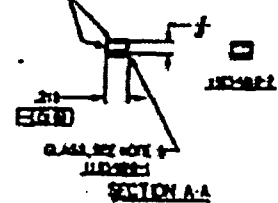
REGISTERED SOURCE(S) OF SUPPLY	
MANUFACTURER	CONTACT PERSON
SELF-POWERED LIGHTING LTD 8 WEST OGDEN BLAZA ELMWOOD, IL 60120	NOT AVAILABLE
COLE LIGHTING CO 1500 N. W. 10TH ST MIAMI, FL 33142	NOT AVAILABLE
MILCO 1000 S. W. 10TH ST MIAMI, FL 33142	NOT AVAILABLE
MILCO 1000 S. W. 10TH ST MIAMI, FL 33142	NOT AVAILABLE
MILCO 1000 S. W. 10TH ST MIAMI, FL 33142	NOT AVAILABLE

SOURCE USED ON:
M224 HANDLE AND FIRING M



APPLY LACEROLACRYLIC
COLOR WHITE POLYMER
APPLY SIZE FULL LENGTH OF
VALVE AND THICKNESS
3.000 - CLEAN SURFACE
PRIOR TO APPLICATION
ALTERNATE 11-
SEE NOTE 9

NO.	DATE	DESCRIPTION



PART NO	QUANTITY	INTERIM PRICE/PC @ 70°F	COLOR OF PROTOTYPE	SPECTRAL TYPE	1/2 YEAR ORDER
M224M-1	0.2	2.50	GREEN	2200 ± 30	7000 ± 30
M224M-2	0.2	2.50	GREEN	2200 ± 30	7000 ± 30

APPLICABLE COMMENTS
2005 - M224M

NO.	DATE	DESCRIPTION	BY	FOR	APPROVED BY

PART NO SEE TABLE 1
LAMP RADIOUMBIUS
M224M-1
M224M-2

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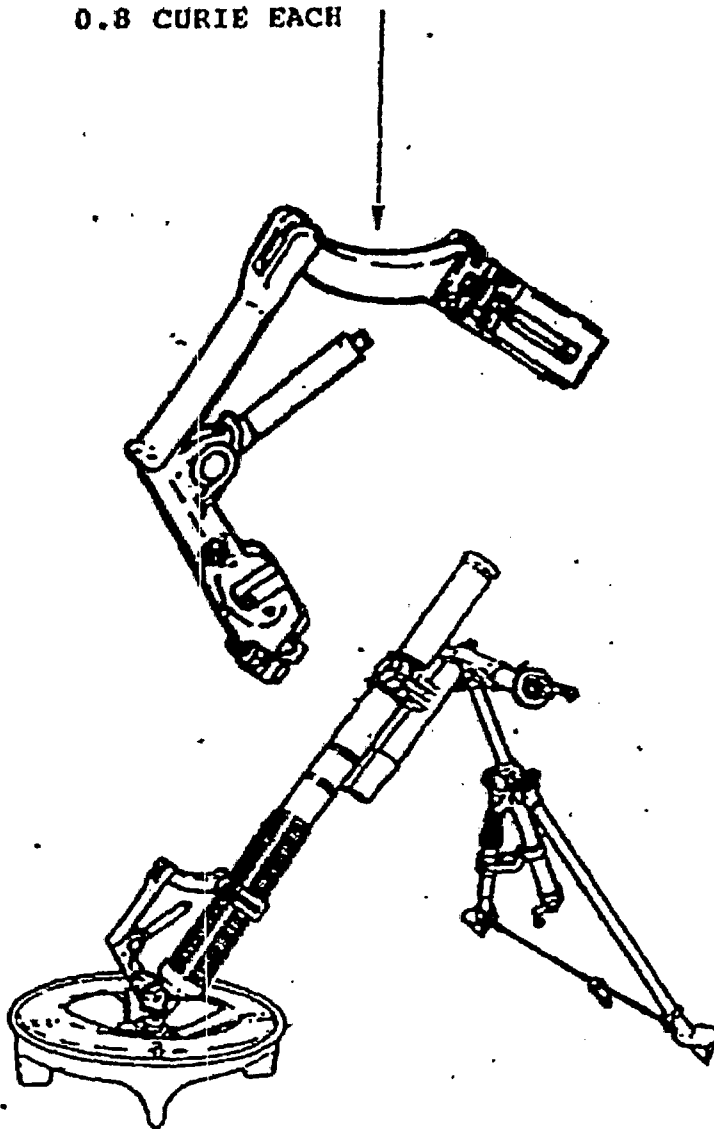
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ATTACHMENT 2 OF 2

MORTAR, 60 MM, M224
RADIOACTIVE SOURCE LOCATION

RANGE INDICATOR ASSEMBLY
PN 9360374
SOURCE PN 11834818 (4)
0.8 CURIE EACH



TOTAL TRITIUM PER ASSEMBLY: 3.2 CURIE