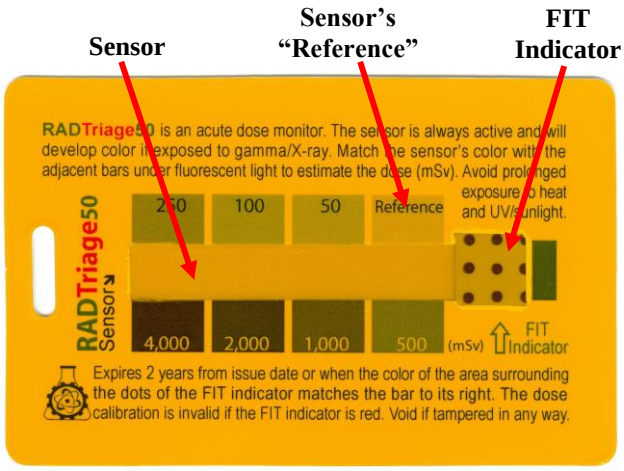
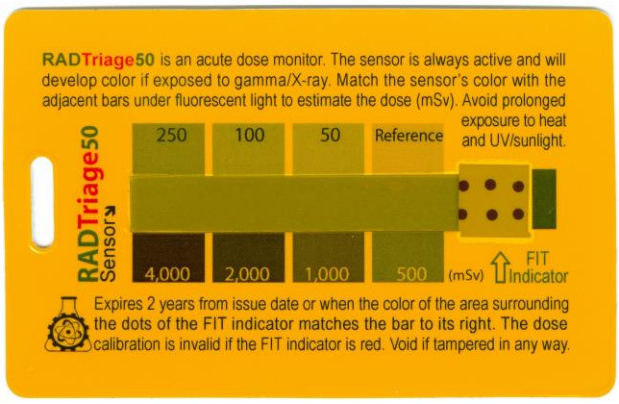
RADTriage50 - USER MANUAL

Read and follow the instructions provided on the dosimeter and in this manual. RADTriage50 is a personal casualty, acute dose dosimeter. It is intended to be used for monitoring medically significant dose in an event of a radiological incident, such as an accident at a nuclear power plant or, a nuclear or dirty bomb explosion, see a video at https://youtu.be/uTaKmhyluHo It supplements, but does not replace, any other devices that a user may be required to use. It has two monitors: (1) the sensor (central rectangular strip in the center) which monitors ionizing radiations above 50 mSv (yearly allowed dose limit for occupational workers in USA) and (2) a FIT™ indicator (located on the right hand end of the sensor with four to nine dark dots) which monitors tampering, service life and the effects of undesired ambient conditions. When received, the area surrounding the dark dots of the FIT indicator may have coloration but should be lighter than the colored reference bar on its right.



How to read the exposure/dose: The dosimeter is always active and ready to use. It should not be used for monitoring dose below 50 mSv, even though it may indicate a lower dose.

- The sensor's color must not be noticeably darker than that of the "Reference" bar above it on the right when received
- The sensor instantly develops color upon exposure to gamma/X-ray and the color intensifies with increasing dose.
- Color development is permanent and cumulative.
- Exposure dose can be estimated with an uncertainty of about 20% by comparing the color of the sensor with the color reference bars printed on the top and bottom of the sensor under fluorescent light.
- If the sensor develops a color in-between any two adjacent reference bars, it indicates an in-between dose.



RADTriage50 exposed to 250 mSv

Sensor's limitations: The sensor has the following major limitations and undesired properties:

- The sensor will not monitor gamma/X-ray below 30 KeV, electrons/beta below 0.5 MeV) and alpha particles.
- The sensor will not monitor dose from diagnostic X-ray (e.g., chest or dental) or security X-ray machines. Multiple (e.g., about ten) exposures to medical or airport luggage and CAT scans may result in sufficient exposure to produce a detectable color change in the sensor.
- The radiated sensor, especially above 1,000 mSv is bathochromic (i.e., it displays different color shades under different lights). In an event RADTriage is exposed to such a high dose, estimate the exposure under fluorescent light.

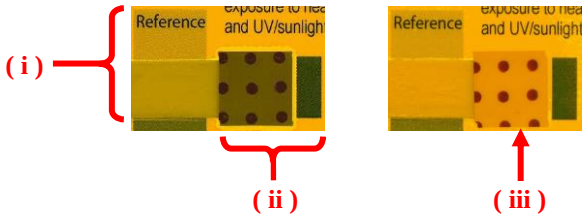
- The sensor has slight thermal reactivity and therefore has a service life of two years at room temperature (25°C/77°F). Avoid prolonged exposure to heat.
- The sensor develops faint color upon prolonged (e.g., a couple of days) exposure to UV/Sunlight. Avoid prolonged exposure to UV/sunlight.

FIT Indicator: The sensor also develops faint color upon prolong exposure to heat and UV light and hence RADTriage is equipped with an indicator (FIT) for monitoring such exposures. If used as per instructions, it is least likely that the sensor will provide false positives or negatives. The FIT indicator simultaneously monitors (1) service-life and, false positives and negatives from overexposure to heat & UV/sunlight which will be indicated by the darkening of the area surrounding the dark dots and (2) inactivation or altered sensitivity (i.e., change of dose calibration) which will be indicated by the FIT changing to purple or red.

- If the FIT is not purple/red, sensor is active and the calibration of the sensor is valid.
- If RADTriage50 is exposed to heat above 95°C/203°F, the FIT will change to purple or red indicating an altered sensitivity of the sensor to radiation and hence the dose calibration is not valid. Replace the dosimeter if the FIT is purple or red.
- FIT is an indicator and as it monitors many parameters simultaneously and hence the uncertainty in monitoring the service life is high (~50%).

Service life: The estimated service life of dosimeter is two years at room temperature in the absence of contributions from other environmental effects.

- Depending upon the time, the temperature above the room temperature, and/or UV/sunlight exposure, the service life will be reduced proportional to the exposures.
- Service life can be extended to about ten years if stored in a freezer below -15°C/5°F when not in use.
- Service life expires when (i) the color of the sensor is noticeably darker than the "Reference" bar above it, (ii) the area surrounding the dark dots of the FIT is noticeably darker than the color reference bar on its right or, (iii) the FIT is purple or red. Replace the dosimeter upon expiration of service life.



Examples of expired service life / when to replace

Replacing RADTriage: Replace RADTriage when one or more of the following occur:

- Two years of use at room temperature or ten years of storage in a freezer at -15°C/5°F.
- When the sensor develops color that is noticeably darker than the "Reference" bar above it.
- When the area surrounding the dark dots of the FIT indicator is noticeably darker than the color reference bar on its right.
- If the FIT is purple or red.

Additional information: For additional information or questions related to RADTriage visit *www.jplabs.com* or contact:

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LIMITED LIABILITY: RADTriage50 is expected to perform as specified if used as recommended and instructions are followed. In an event that the product does not perform as specified, JP Labs will replace the product. JP Labs specifically disclaims all other warranties and liabilities expressed or implied. All warranties are null and void if (1) the FIT indicator is red or purple and/or area surrounding the dots of the FIT is noticeably darker than that of its color reference bar, or (2) RADTriage50 is tampered with in any way.