

RADSticker™



RADSticker™

**“SEEING IS BELIEVING” DOSIMETER
MAKES RADIATION EXPOSURE VISIBLE**

The smallest casualty dosimeter designed to instantly know whether user is exposed to harmful dose and needs a medical treatment in an event of a radiological incident, thereby minimizing panic and worry

RADIOLOGICAL INCIDENTS & MAJOR CONCERNS

In an event of a major radiological incident



Chernobyl, 1986



Goiania, Brazil, 1987

Affected people



Panic



Worry

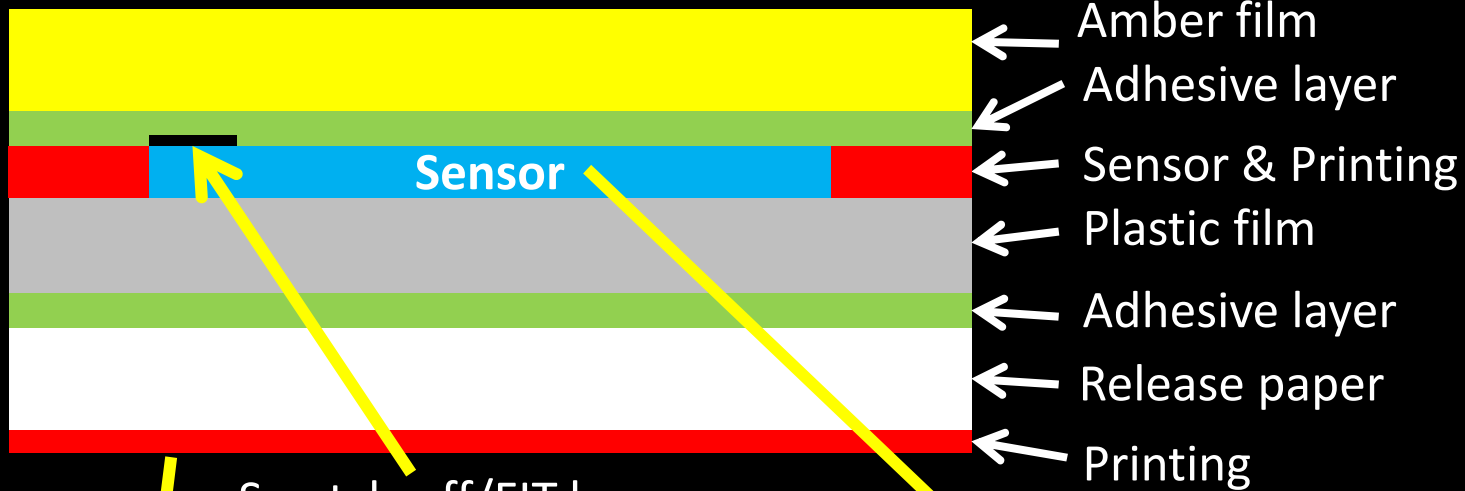
NEED FOR RADSticker

- Except in case of a nuclear bomb detonation and a melt down at a nuclear power plant, it is less likely that a large number of the people will get exposed to a dose higher than 5 or 25 rads, the legally allowed yearly and life time allowed dosages, respectively for occupational workers
- It is difficult, time consuming, complex and expensive to determine the dose and its effect below 25 rads from human tissue samples (e.g., blood), provided the test is performed within days after the exposure
- Most of the dosimeters are bulky, expensive and/or require analysis, which takes days

NEED FOR RADSticker

- Even if one knows that a person is exposed to a dose lower than 25 rad, there is no real medical treatment available to cure or minimize its effect
- Most of us want to know the actual exposure to ionizing radiation but medically little can be done if the dose is below about 25 rad
- Hence, in order to minimize people running to hospitals and/or demanding tests and/or medical treatment in an event of a radiological incident, such as a dirty bomb, it is good to provide citizens with dosimeters, such as inexpensive RADSticker. RADSticker is a citizen's dosimeter to minimize panic and worry

RADSticker™



Scratch-off/FIT bar

User agrees to read and follow instructions in the manual of the RADSticker & at www.jplabs.com. The sensor is always active & will instantly develop color if exposed to Gamma/X-ray. 5 and 25 rads (50 and 250 mSv) are annual and life time allowed dosages for emergency workers. Dose limits are lower for fetus and children. Contact: sirad@jplabs.com. US and other patents pending.

Top view →

1000 400 200 Invalid if >195°F or tampered
Service Life Ends
100 50 25 Avoid sun and heat exposure

Match sensor's color for dose (rad) estimation & service life. Medical treatment & info. at: www.epa.gov/radiation/rert; and www.jplabs.com

← Back view

EFFECT OF DOSE AND TRIAGING CAPABILITY



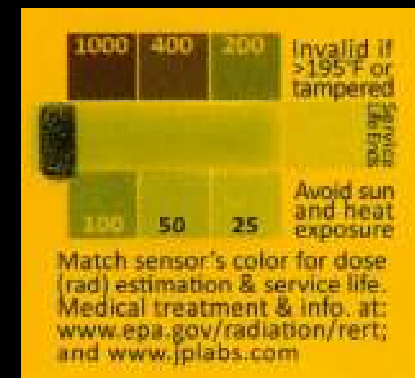
0 rad



5 rad



10 rad



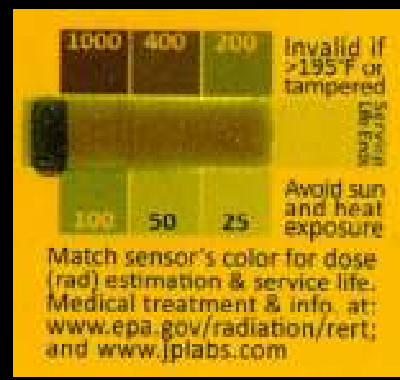
25 rad



50 rad



100 rad



200 rad



400 rad

TRIAGING ABILITY: 5rad/50mSv, 25rad/250mSv, >50rad/500mSv, Medical treatment & priorities

EFFECT OF PROLONGED SUNLIGHT

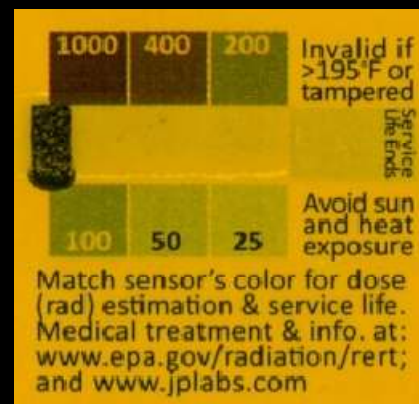
- Under the normal circumstances and if used as per instructions, the sensor of RADTriage will not give false signals. However, prolonged exposure to direct sunlight, RADSticker will give false positive reading



0 hr



6 hrs



12 hrs



20 hr



28 hr



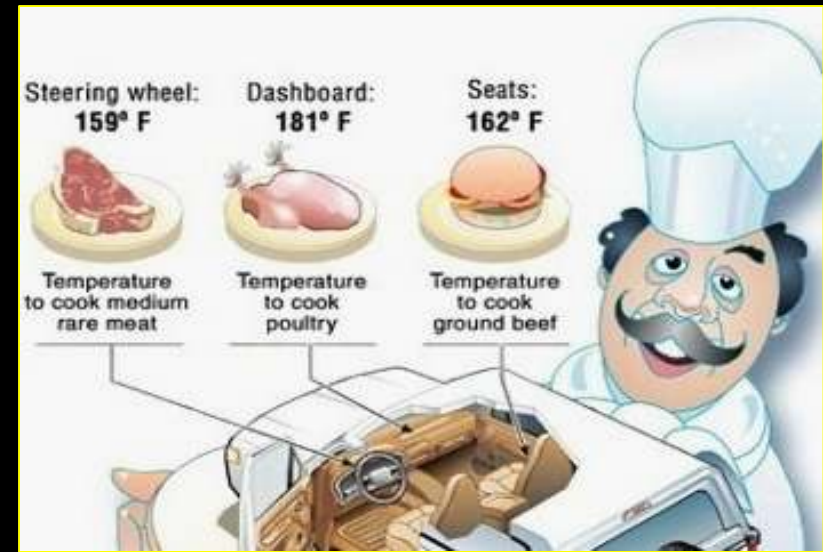
36 hrs

12 hrs

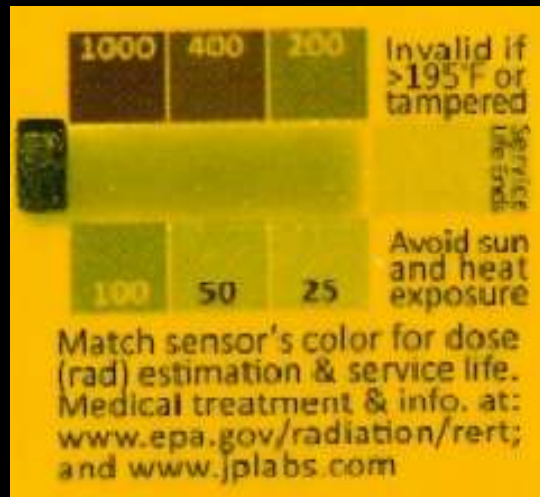
20 hr

MAXIMUM OPERATING TEMPERATURE

- A few laundry cycles of washing and drying (below 80°C) has a negligible effect.
- It is unaffected by humidity and water.
- The maximum operating temperature is 90°C



Control



90°C, 4 hrs + 50 rads



90°C, 4 hrs + 100 rads

OTHER EFFECTS & PARAMETERS

- **Shelf life:** ~2-3 years at 25°C
 - ~10 years in a freezer (stockpiled)
 - Less than 1 year at higher temperatures
- **Dose rate:** Negligible
- **Uncertainty:** $\pm 25\%$ visually
- **Response time:** Instant, 95% within a minute
- **Energy:** Negligible above ~200 keV
 - slight attenuation at lower energy
- **Temperature of radiation:** Small ($\sim 0.1\%/^{\circ}\text{C}$ between -10°C - 60°C)

**A TECHNOLOGICAL GAP: THERE WAS A NEED & NO
AFORDABLE DOSIMETER FOR PUBLIC WHIS IS:**

- Instant, Self-indicating, User friendly
- Inexpensive, Reliable, Light weight, Wearable
- Monitors 5-1,000 rads
- Always ready without a power source
- Practically non-destructible, Stockpileable
- Two years shelf life, unaffected by normal ambient conditions
- User in control: monitor dose & false signals

**RADSticker™ has these and many other desired
properties and fills that technological gap**

RADSticker



- You see & estimate dose
- Weigh 0.2 gram only
- Almost non-destructible
- Service life of 1-5 years
- Pre-calibrated & reliable
- Stockpileable for 10 years
- Operate up to 90°C/195°F
- Always ready without battery
- No electronics or moving parts
- Maintenance & service free

SIRADs are not substitutes for precision dosimeters