

COMPARISON OF RADIATION DOSIMETERS

	<u>Self-indicating, instant casualty</u>		Film	TLD* ²	OSL* ³	Quartz fiber	Electronic* ⁴
	RADTriage*	RADSticker* ¹	(AgBr)			Electrometer	
Average Price (\$)	7 - 20 ^{@1}	0.5 - 2 ^{@1}	50-200 ^{@2}	50-200 ^{@2}	50-200 ^{@2}	50-100	100-1,000 ^{@3}
Main users	First responders & general public		Occupational	Occupational	Occupational	Occupational	Wide
Objective	Triaging exposure information & medical treatment in emergencies		Monitor very low exposure	Monitor very low exposure	Monitor very low exposure	Monitor very low exposure	Detect & monitor ⁽¹⁾
LLD (rad)⁽²⁾	2	10	0.01	0.01	0.01	1	Lowest
Dose range (rad)	1-1,000+	10 -1,000+	0.01 - 100	0.01 - 1,000+	0.01 - 1,000+	1 - 100	NA
Uncertainty (±%)	10-20 ⁽³⁾	10-25 ⁽³⁾	5	5	5	10	Least
Time for results	Instant	Instant	Days	Days	Days	Instant	Instant
Support:							
Equipment	None required	None required	Developer	Reader	Reader	Charger	Power
Service	None required	None required	Required	Required	Required	Calibration	Little
Reusability	Disposable	Disposable	No	Recycled	Recycled	Yes	Yes
Average size	Credit card	Post office stamp	~1x 5x 5 cm ³	~1x 5x 5 cm ³	~1x 5x 5 cm ³	~1x10 cm ³	Small-bulky
Weight (gram)	5	Negligible (0.2)	15-30	15-30	15-30	15-30	100-1,000
Fragile	No	No	Yes	Yes	Yes	Yes	Very
Archiving	Available	Available	Yes/fixed	No	No	No	No
Shelf life	One year	Two+ years	Month	Months	Months	NA	NA
Most desirable feature	Wearable, hence ideal for first responders and public in emergency		Monitors very low dose	Monitors very low dose	Monitors very low dose	Monitors low dose	Highest sensitivity
Least desirable feature	Not sensitive for occupational workers and monitoring low dose		Takes days to know the results/ Not suitable in a radiological emergency			Fragile	Bulky & expensive

Biodosimetry, where a tissue sample, e.g., blood is taken and analyzed is expensive, complex and takes days is not included

In a radiological incident, you don't have to be a dosimeter (provide blood sample) if you carry one.

*1 = Products of JP Laboratories, Inc., Middlesex, NJ

*2 = TLD, Thermoluminescence Dosimeter

*3 = OSL, Optically Simulated Luminescence

*4 = Ionization, Geiger-Muller, Scintillation & solid state

@1 = Price depends upon type and quantity

@2 = Price depends on service required

@3 = Price depends upon type and features

(1) = Detection, dose and dose rate meters

(2) = LLD = Lowest limit of detection (1 rad = 10 mSv)

(3) = Supporting equipment required

See the following slide for some representative images of dosimeters, detectors and pagers

EXAMPLES OF SOME COMMERCIAALLY AVAILABLE DETECTORS, PAGERS AND DOSIMETERS

