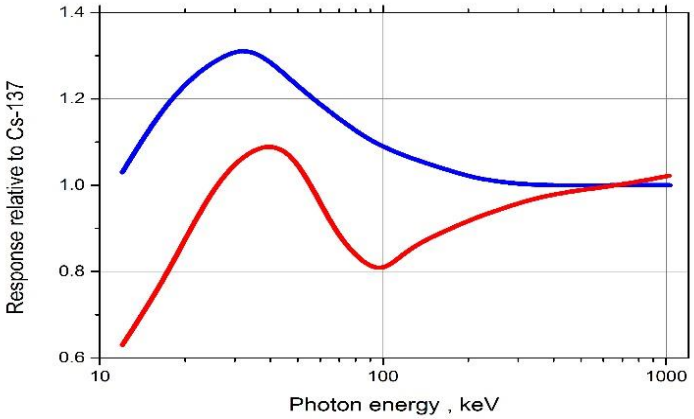
Thermoluminescent Detectors

Tailored to your needs

Detectors are produced by Radcard (former TLD Poland) and dimension, active layer thickness, isotropic composition and sensitivity can be adjusted to requirements. Suitable for all applications in radiation protection, environmental and clinical dosimetry. Several standard shapes and powders of MTS (LiF:Mg,Ti) and MCP (LiF:Mg,Cu,P) are available.



Graph 1:

Energy response of MTS and MCP

MTS

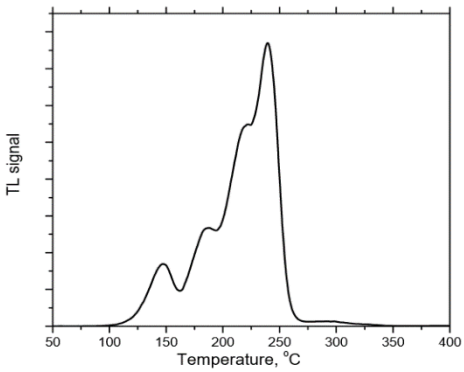
MCP

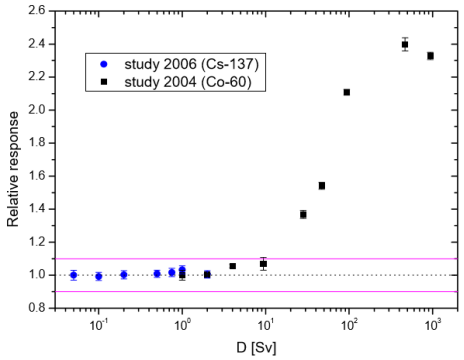
Technical Specifications

Property	MTS	MCP	MCP-Ns
Standard shapes	disc Ø 4.5 mm x 0.9 mm chip 3.2 mm x 3.2 mm x 0.9 mm chip 3.2 mm x 3.2 mm x 0.38 mm microcube 1 mm x 1 mm x 1 mm rod 1 mm x 1 mm x 6 mm powder 80-200 µm grain size		Thin layer pellet, 4.5 mm x 0.9 mm, (0.05 mm thin layer)
Isotopes	Natural Li, ^{7}Li, ^{6}Li		Natural Li, ^{7}Li
Effective atomic number Z	8.2	8.2	8.2
Effective thickness [mg.cm-2]			8.5
Density [g.cm-3]	2.5	2.5	2.5
TL emission spectrum [nm]	400	385	385
Relative sensitivity to TLD-100	1	15	1
Detection threshold [µGy]	10	< 1	3
Linearity range up to [Gy]	5	10	10
Repeatability	< 2%	< 2%	< 2%
Photon energy dependence 30 keV - 1.3 MeV	< 30 %	< 20 %	20 %
Batch homogeneity [1 SD]	< 5 %	< 5 %	< 10%
Thermal fading [% at room temperature]	< 5% / year	< 5% / year	< 5% / year
Light induced fading	negligible at laboratory light intensity	negligible at laboratory light intensity	negligible at laboratory light intensity
Oven annealing before irradiation	1 hr @ 400°C + 2 hr @ 100°C	10 min @ 240°C fast cool-down	
Oven annealing after irradiation	ca. 10 min @ 100°C	ca. 15 min @ 100°C	
Reading (reader depending)	270°C to 350°C	240°C	

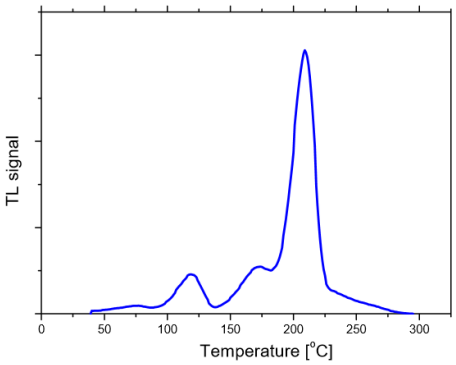
All information in this brochure is subject to technical changes without notice.

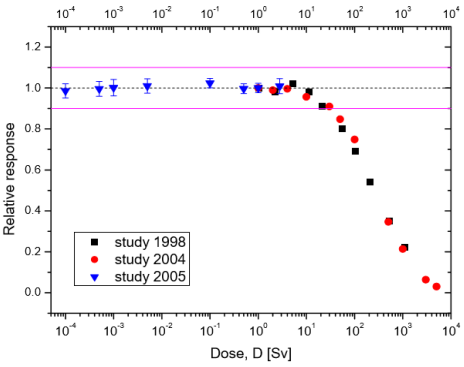
Glow curve and dose response MTS





Glow curve and dose response MCP





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