

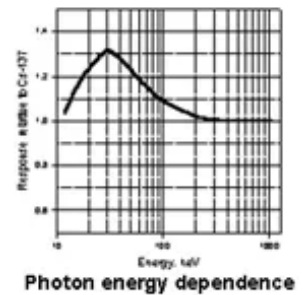
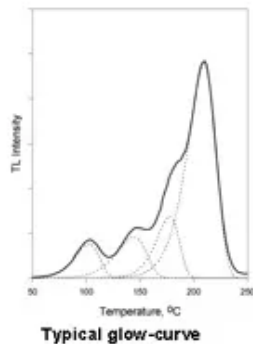
## MTS-N (LiF:Mg,Ti) - Standard LiF TLD material

Annealing conditions:

Pre-irradiation: 400°C for 1 hour followed by 100°C for 2 hours.

Post-irradiation: 100°C for 10 minutes

To maximise detector sensitivity we recommend that they be rapidly cooled after 400°C annealing, e.g. by placing the container with hot detectors on a large aluminium block.



Main features of MTS Pellets	
Form	solid disc 4.5 mm diameter, of selected thickness
Effective atomic number Z	8.2
Density [g.cm-3]	2.5
TL emission spectrum [nm]	400
Relative sensitivity to TLD-100	1
Main peak temperature [oC]	210
Zero dose reading [μGy]	15
Detection threshold [μGy]	10
Linearity range [Gy]	5×10-5 - 5
Repeatability	< 2%
Photon energy dependence 30 keV - 1.3 MeV	< 30 %
Batch homogeneity [1 SD]	< 5 %
Thermal fading [% at room temperature]	< 5% / yr
Fluorescent light effect on fading and zero reading	negligible at laboratory light intensity
Reusability	unlimited
Dose rate influence	independent

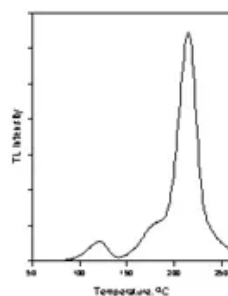
## MCP-N (LiF:Mg,Cu,P) - Ultra-sensitive material for radiation protection and environmental dosimetry

Annealing conditions:

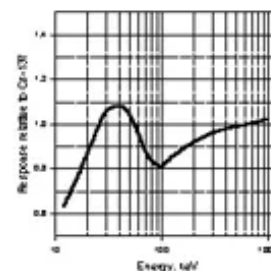
Pre-irradiation: 240°C for 10 minutes followed by rapid cooling to room temperature.

Post-irradiation: 100°C for 10 minutes

To maximise detector sensitivity we recommend that they be rapidly cooled after 240°C annealing, e.g. by placing the container with hot detectors on a large aluminium block.



Typical glow-curve



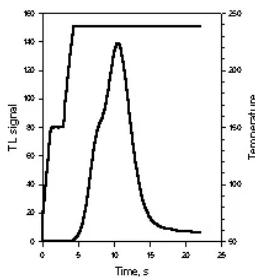
Photon energy dependence

Main features of MCP Pellets	
Form	solid disc 4.5 mm diameter, of selected thickness
Effective atomic number Z	8.2
Density [g.cm-3]	2.5
TL emission spectrum [nm]	385
Relative sensitivity to TLD-100	15
Main peak temperature [°C]	210
Zero dose reading [nGy]	100
Detection threshold [nGy]	50
Linearity range [Gy]	$10^{-6} - 10$
Repeatability	< 2%
Photon energy dependence 30 keV - 1.3 MeV	< 20 %
Batch homogeneity [1 SD]	< 5 %
Thermal fading [% at room temperature]	< 5% / yr
Fluorescent light effect on fading and zero reading	negligible at laboratory light intensity
Reusability	unlimited
Dose rate influence	independent

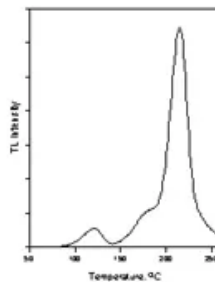
# MCP-Ns - Thin active-layer detector, the best solution for extremity dosimetry

Annealing conditions:

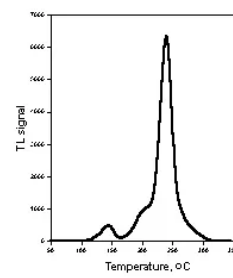
Oven annealing is recommended, however reader annealing is also possible. Oven annealing should be performed at 240°C for 10 min, with detectors placed on thin aluminium or stainless steel plate. After annealing period the plate should be removed from the oven and cooled down to room temperature on a thick (c.a. 1 - 4 cm) aluminium plate. To remove low temperature peaks an annealing at 100°C for ten minutes after irradiation should be applied.



Glow-curve of MCP-Ns measured with a two-step plateau heating profile (after 100°C/10 min anneal)

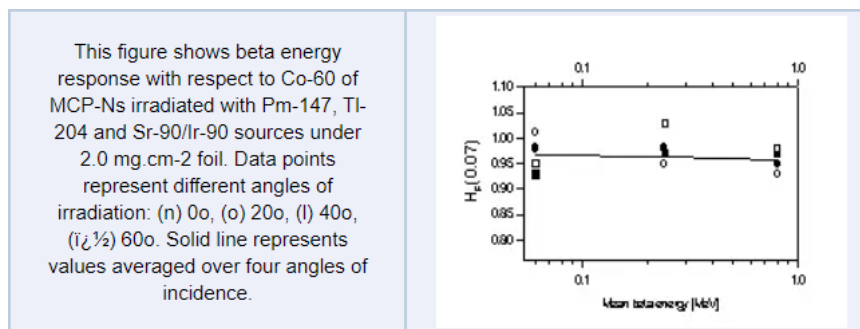


Typical glow-curve



Glow-curve of MCP-Ns measured with a linear ramp (without 100°C/10 min anneal)

Beta energy response:



Properties	
Effective thickness [mg.cm <sup>-2</sup> ]	8.5
Relative sensitivity to TLD-100	1
Zero dose reading [μGy]	4
Detection threshold [μGy]	3
Linearity range [Gy]	10 <sup>-5</sup> - 10
Repeatability	< 2%
Thermal fading [% at room temperature]	< 5% / yr
Fluorescent light effect on fading and zero reading	negligible at laboratory light intensity
Reusability	unlimited
Dose rate influence	independent