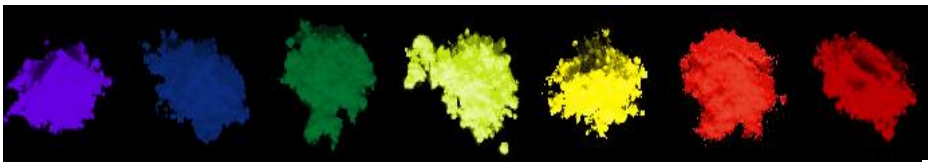

RG TOM
Tailored Optical
Materials, Prof. Jüstel

Phosphor Information Leaflet

GENERAL

Name	Calcium magnesium tungstate chromium neodymium
Chemical formula	$Ca_2MgWO_6:Cr^{3+},Nd^{3+}$
Application areas	Optical marker
Optical transition	Cr^{3+}: [Ar]3d^3 (^{2}E, $^2T_1$, $^4T_2$) – [Ar]3d^3 ($^4A_2$) Nd^{3+}: [Xe]4f^1 ($^4F_{3/2}$) – [Xe]4f^1 ($^4I_{9/2}$)

OPTICAL PROPERTIES

Excitation maxima @ 630 nm	330 nm (3,76 eV), 590 nm (2,10 eV)
Emission maximum @ 470 nm exc.	879 nm (1.41 eV)
Centroid wavelength	878 nm (1.41 eV)
Full width @ half emission maximum	lines
Lumen equivalent	1 lm/$W_{opt.}$
CIE1931 chromaticity coordinates (x, y)	0.706, 0.294
Band edge of host lattice	-
Reflection @ 365 nm	10 %
Decay time $\tau_{1/e}$	120 µs

PHYSICAL PROPERTIES

Body colour	white
Density	5.3 g/cm^3
Refractive index (at λ)	
Mineral type	Perovskite
Crystal system	Monoclinic
Space group (#)	P12$_1$/c1 (14)