Two types of cellulose nitrate were studied; the red cellulose nitrate LR-115 type 2 and the light pink CA 80-15 samples (Kodak, France).The samples were exposed

to different doses of ɤ-rays from a 60Co-source (from 0.1-0.3 Mrad) at room tempera-

ture. Conductivity and dielectric constant measurements were carried out. For both

nitrate samples (CA 80-15, LR-115), the electrical conductivities are high in compari-

son with the unirradiated ones for a dose of 0.1 Mrad, but there is a slight change

between 0.1 and 0.2Mrad doses for CA 80-15samples while the electrical conductiv-

ity is found to be less for 0.3 Mrad due to the damage in the plastic network.Also for

the samples LR-115 the electrical conductivity is lower for doses of 0.2,0.3 Mrad than

that for 0.1 Mrad dose.We notice that the glass transition temperature (T,) of

cellulose nitrate is clearly affected by y-irradiation as judged from the anomalies in

o(T)for the two samples which contain different amounts of the pigment.Irradiation

of LR-I15 samples resulted in a higher dielectric constant for 0.1 Mrad dose and a

lower one for 0.2,0.3 Mrad doses,but still higher relative to the fresh sample. The

di- electric constant of irradiated CA 80-15 samples (0.1,0.2 Mrad) is found to be high relative to the fresh sample,but for 0.3 Mrad dose the dielectric constant is lower

than that of the fresh one.