



LUVOCOM® CXR

Radiation-crosslinkable compounds

- Enhanced thermal properties
- Enhanced mechanical characteristics
- Enhanced chemical resistance
- Enhanced tribological properties
- Tailor-made solutions

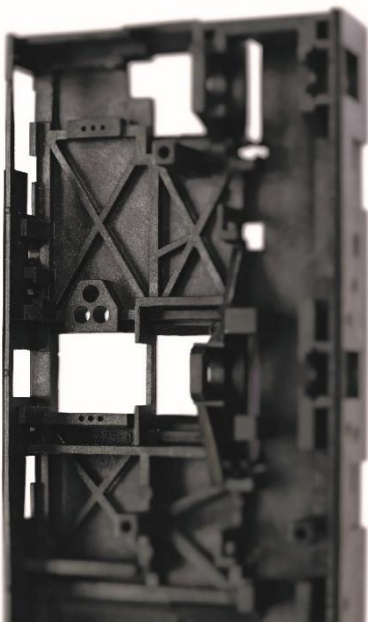


In various polymers crosslinking can be induced by irradiation with gamma (γ) rays. From a thermoplastic material, this produces a material that can no longer be melted and behaves largely like a thermosetting resin. Crosslinked materials are characterised by improved properties. As a result, the temperature resistance and continuous service temperature rise. This leads to higher material strengths under the influence of heat together with a longer lifespan of components.

On the basis of this technology, the LEHVOSS Group is offering the product line LUVOCOM CXR, a series of compounds using polyamides. The stiffnesses and strengths of LUVOCOM CXR compounds are higher overall compared with non-crosslinked materials. The elongation values may in some cases decrease a little, but the creep strengths and elastic properties are always improved. Crosslinking additionally increases the resistance to chemicals. Furthermore, the swelling behaviour is reduced and resistance to hydrolysis is improved.

The property improvements listed mean that in many cases components are more resistant to environmental factors and also exhibit an enhanced tribological behaviour (lower wear). Examples of useful applications in electrical engineering include lead-free soldering technology and the increased glow-wire combustion resistance.

We can also develop compounds of the LUVOCOM CXR product line in accordance with your requirements.



LUVOCOM CXR for more thermally resistant structural parts



LUVOCOM CXR for lower wear in tribological applications

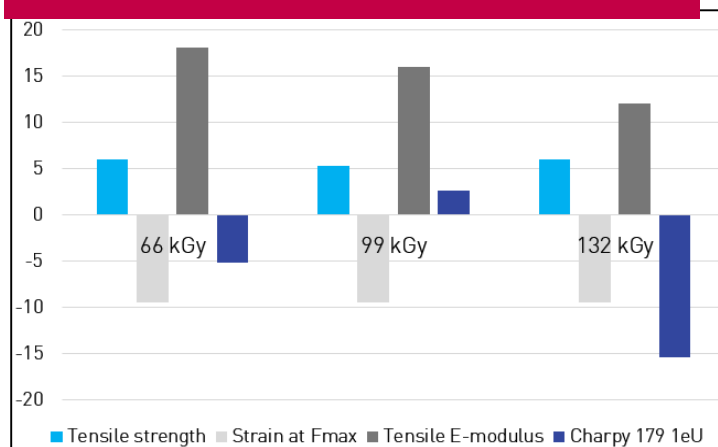
Processing, crosslinking and properties

The processing of LUVOCOM CXR; such as in injection moulding or extrusion, does not differ from that of non-crosslinkable LUVOCOM compounds. In order to crosslink LUVOCOM CXR, subsequent irradiation with γ rays is necessary. This is usually carried out by service providers who specialize in this procedure.

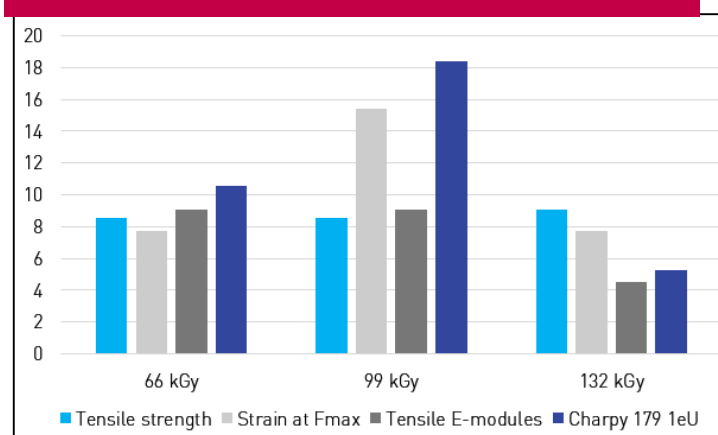
Series of experiments in applications technology have shown that the particularly good reactivity of LUVOCOM CXR means that a radiation dose of 66 kGy is generally sufficient. Results suggest that 132 kGy tends to represent an unnecessarily high energy input.

Another important factor that influences the material properties is the specific composition of the CXR compound. This can be seen in the two graphs. In both cases, it is possible to increase the mechanical properties compared with the non-crosslinked samples. In Formulation 2, such an increase is also achieved for impact strength.

PA66/CF/Lubricant Package/CXR – Formulation 1
Percentage change in property over radiation dose



PA66/CF/Lubricant Package/CXR – Formulation 2
Percentage change in property over radiation dose



Our Material Competences



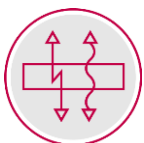
STRUCTURAL



RESISTANT



TRIBOLOGICAL



CONDUCTIVE



WEIGHT



PROTECTION



SURFACE



CUSTOMIZED POLYMER MATERIALS

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