BecFluid®

Dielectric cooling and insulating fluid

Materials compatibility

As a general rule, materials which are used in the manufacture of conventional mineral oil-filled transformers are compatible with BecFluid® 9902.

This document lists by application materials which have been tested at 90 ºC and have demonstrated no observable attack (for polymeric materials less than 2% dimensional change) and are thus considered compatible with BecFluid® 9902.

It also draws attention to materials which are considered incompatible or are recommended for use only in particular circumstances. For example neoprene rubber may be used as a binder in cork composites but should not be used on its own. The list is not exhaustive and is intended for guidance only.

Materials are listed by type but within a specific type there may be available several proprietary formulations. The response of different formulations to BecFluid® may vary according to the additives used. This applies particularly to elastomers and polymers.

It is strongly recommended that if a material not listed is critical to equipment performance the manufacturer should be consulted and tests carried out. ELANTAS Beck will be pleased to liaise with the manufacturer and if necessary carry out tests itself at the UL-approved laboratory.

Application	Material Type
Seals and "O" rings	Nitrile rubber (>30% nitrile) Silicone rubber, Viton rubber Teflon, Nylon
Gaskets and joints	Cork/nitrile rubber Cork/neoprene rubber*
Wire enamels	Polyester, Epoxy, Polyurethane, Polyesterimide, Polyvinylacetal, Lewmex, Lewcanex
Tank enamels**	Alkyd, Polyurethane modified alkyd, Epoxy, Polyurethane
Insulating varnishes	Alkyd, Acrylic, Epoxy Polyurethane, Polyimide
Sleevings	Epoxy/glass, Silicone glass Polyurethane/glass, Polyester/glass
Films	Mylar, Cellulose triacetate, Kerodex, Melinex

* Neoprene rubber is an acceptable binder for cork but should not be used on its own. EPDM is plasticized by both mineral oil and BecFluid® 9902, and so should be avoided in immersion conditions.

** Tank enamels based on natural resins (dissolved in IMS), although resistant to BecFluid® 9902, may leach out acidity on ageing.

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Application	Material Type
Metals	Copper, Phosphor Bronze, Aluminium, Zinc plated steel***, Iron, Brass
Miscellaneous	Kraft paper, Cotton tape/paper, Elephantide****, Polyurethane casting resin, Polymethyl methacrylate, Polycarbonate, Polypropylene, Diamond patterned epoxy paper, Gum arabic adhesive, PVC cable sheathing*****, Cellulose, Aramide (Nomex)

*** Zinc plated steel components are not recommended apart from small fasteners. Chromate passivation, although unaffected by BecFluid® 9902, will break down at normal transformer operating temperatures and ideally should not be used.

**** Certain papers and pressboards may release dye into BecFluid® 9902. This has not been found to adversely affect BecFluid® 9902 or its insulation properties.

***** PVC may release plasticizers into BecFluid® 9902 and after prolonged immersion become brittle.