

ARYPHAN®

Aryphan F: Flame retardant (UL94, VTM-0), colourless, high transparency (glossy types), high heat resistance, thermoformable.

Aryphan N: High heat resistance, yellow (colourless possible), excellent thermoforming properties.

Material

ARYPHAN® is manufactured by solvent casting from Polyarylate without added plasticizer. The film can be made with either a glossy or a matt surface, depending on the surface of the casting belt. A film matt on both sides may be produced by laminating two films each having a single matt side.

Mechanical properties

ARYPHAN® has very high tear initiation and propagation resistance and is resistant to fracture and splintering. Due to the solvent cast process, mechanical properties are nearly identical in MD and TD.

Thermal properties

The glass transition point (T_g) of ARYPHAN® is at 193 °C. The long term heat resistance according to VDE is at 166 °C which is higher as i.e. PET or PC.

Electrical properties

ARYPHAN® has a low dissipation factor which, like its relative permittivity, is only slightly temperature dependent. Insulating properties are very good even at elevated temperatures.

Electrical properties are very similar to Polycarbonate.

Water absorption

Due to its low water absorption of at most 0.35% (less than Polycarbonate) ARYPHAN® is dimensionally stable and its electrical properties are subject to only slight variation.

Optical properties

ARYPHAN® GL is colourless, glossy film (GL) is highly transparent. This is also true for flame retardant grades. Some grades for technical applications are coloured.

Chemical properties

ARYPHAN® is resistant to diluted acids, most salts, alcohols, oils, greases, detergents and saturated aliphatic and cycloaliphatic hydrocarbons.

ARYPHAN® has limited resistance to or is soluble in diluted alkalies, ammonia, amines, ketones, esters, aromatic hydrocarbons and methylene chloride.

Flammability

ARYPHAN® F is flame retardant. It contains a halogen-free flame retardant. This film meets fire safety requirements for electrical insulation and complies with the requirements of UL94 VTM 0.

ARYPHAN® F offers a unique combination of high transparency, high heat resistance and flame retardancy.

Bonding and welding

Methylenechloride and Acetone are useable for achieving a good film/film bond without additional adhesive. Lamination by adhesives is also possible.

ARYPHAN® may also be welded by thermal impulse welding, but welding temperatures must be higher than for other common films.

Thermoforming

ARYPHAN® has excellent thermoforming properties at a film temperature of approx. 220 °C - 230 °C and a mould temperature of at least 120 °C. Shrinkage is very low, with no difference between MD and TD.

Forming parameters depend on mold and forming time and have to be evaluated for each application.

Printing and writing

ARYPHAN® can be printed with special inks using various processes. Solvent-based markers and Indian ink can be used to write on ARYPHAN®. The matt side is resistant to erasing and smudging. Most of the inks suitable for PET and/or PC should be useable.

Environment

ARYPHAN® is environmentally neutral. Production scrap and uncontaminated waste are reused in the production process. The solvents used in the production process are recovered and recycled in a closed circuit system. When dumped or incinerated, ARYPHAN® produces no highly toxic or highly corrosive gases.

ARYPHAN® complies to the regulations of:

- 2002/95/EG (RoHS)
- 2003/11/EG
- Chem.Verb.Ver. (RL76/769/EWG)

The entire company is certified to ISO 9001-2000 and 14001.

ARYPHAN® does not comply with BGA (German Federal Health Office) recommendations.

Applications

- membranes for loudspeakers, microphones and acoustic transducers e.g. in mobile phones
- electrical insulation of coils, transformers, capacitors etc., also as flame retardant grade.
- Self adhesive tapes for technical applications
- instrument scales, name plates
- die cut parts

The aforementioned data are given most conscientiously but without any obligation.

Any processing details are provided merely for guidance: it is the user's responsibility to check the suitability of the product for the intended application.