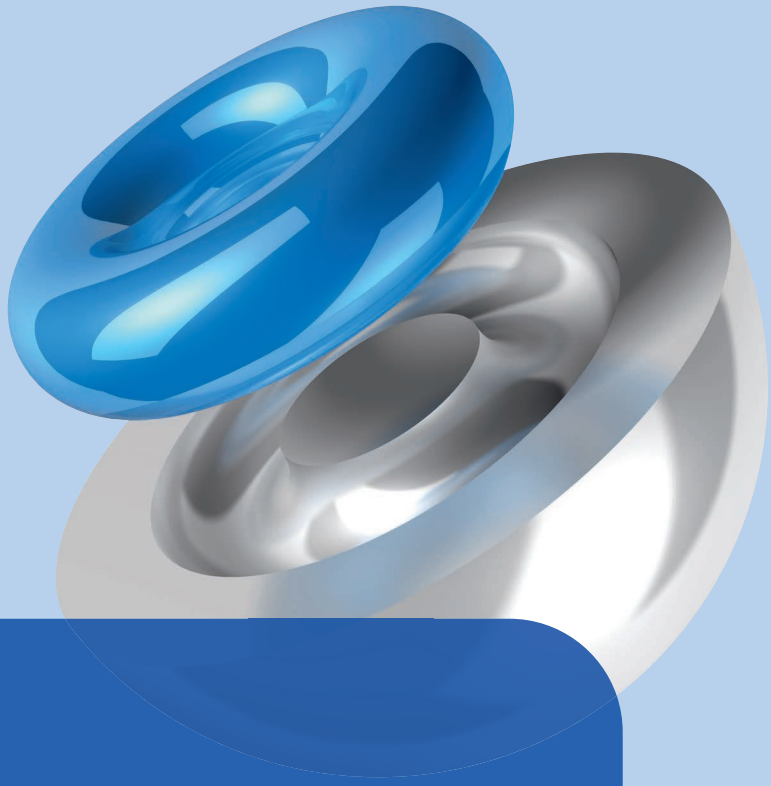
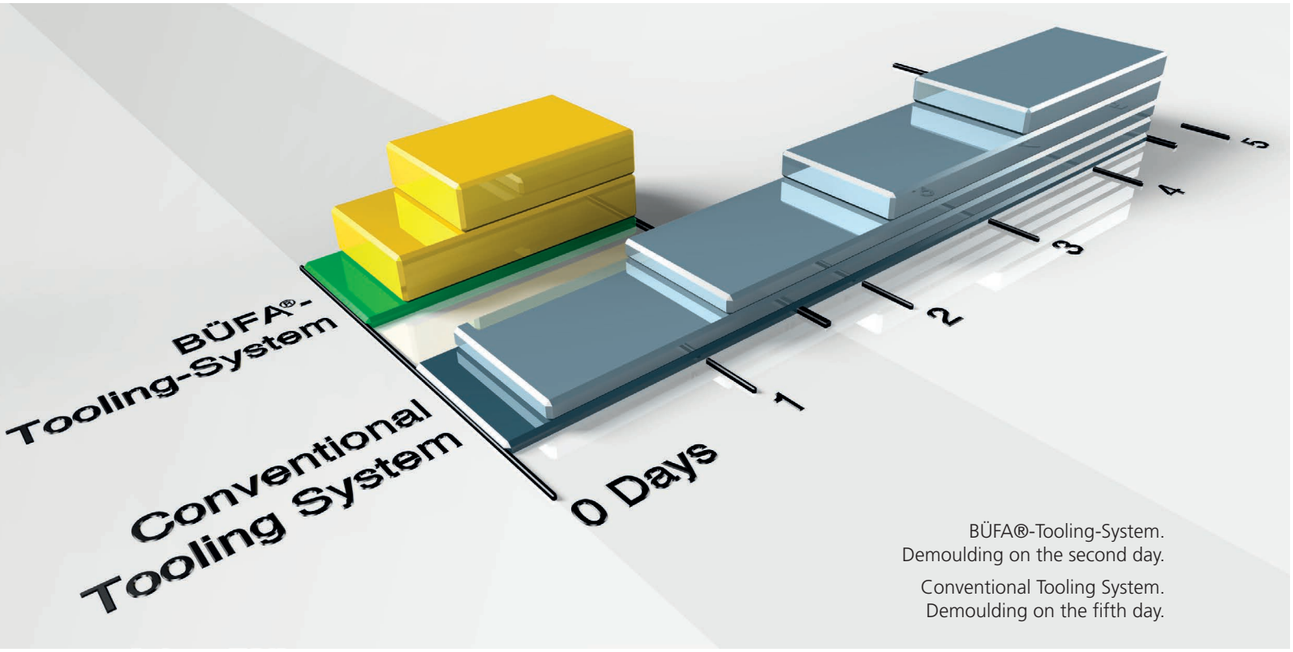
BÜFA



IN GREAT SHAPE

Mould Making Systems

Composites



BÜFA®-Tooling-System.
Demoulding on the second day.

Conventional Tooling System.
Demoulding on the fifth day.

Mould Making Systems

BÜFA®-Tooling-Systems

In the GRP industry, only materials with the best product properties are used to produce moulds of the highest quality.

Extreme resistance to styrene and temperature, high mechanical loading capacity, good gloss over the long-term as well as dimensional accuracy are important decision criteria when selecting a reliable tooling system

The Material

Thanks to new developments in materials, our new BÜFA®-VE-Tooling-Gelcoats fulfil these decisive criteria. By combining them with the new, low-styrene, fast curing and practically shrink-free BÜFA®-Tooling-Resin, moulds that are technically of the highest quality, can be produced in just one day instead of a week.

BÜFA®-Tooling-Resin/Art. No. 700-1974

- pre-accelerated
- standard MEKP cure for simplicity and cost efficiency
- rapid cure for fast mould making
- peroxide indicator – colour change mechanism
- low in styrene – practically no shrinkage
- non-tacky surface
- low density (1,35 g/cm3) - means lighter moulds

BÜFA®-VE-Tooling-Gelcoat/ Art. No. 720-1000 bzw. 720-2000

- pre-accelerated
- MEKP curable without gassing
- good throughcure
- easy application
- scratch resistant, high gloss surfaces
- extreme resistance towards styrene and heat

BÜFA®-VE-Tooling-Gelcoats

Product name	BÜFA®-Conductive-Tooling GC-S natur	BÜFA®-VE-Tooling-Gelcoat-S nature	BÜFA®-VE-Tooling-Gelcoat-H nature
Art. No.	720-0100 (nature)	720-1000	720-2000
Application	spraying quality	spraying quality	brushing quality
Resin base	Hybrid	BPA/VEU	BPA/VEU
Pigmentation	520-0101 (black) / 520-0102 (green)	nature	nature
Viscosity [mPa.s] – Spindle/rpm	24,000 - 4/4	33,000 -4/2	53,000 -4/2
Styrene content [%]	49	40	40
Peroxide / accelerator	2 % MEKP moderatly reactive, pre-accelerated	2 % MEKP moderatly reactive, pre-accelerated	2 % MEKP moderatly reactive, pre-accelerated
Gel time [min]	15	14	14
Tmax [°C]	195	185	185
Elongation at break [%]	> 3	> 3	> 3
HDT [°C]	120	130	110
Range of use / comments	Conductive properties [10^6 Ω], thixotropic mould making gelcoat, good gloss performance	GRP mould-making, available in 4 shades of colour and a non-tinted version, not weather resistant	GRP mould-making, available in 4 shades of colour and a non-tinted version, not weather resistant

Recommended workshop temperature optimal between 18 – 24 °C

To achieve the greatest contrast to the moulded part, black is the optimal colour for white products. Green is the optimal colour for white products with dark blue stripes. Orange is the commonly used colour for light blue products. Grey is the last colour to complete the series of tooling gelcoats.

Available Gelcoat Colours

Colour	Art. No. spraying quality	Art. No. brushing quality
Black	520-1104	520-2107
Light Green	520-1108	520-2109
Orange	520-1110	520-2111
Grey	520-1112	520-2113
Nature	720-1000	720-2000

Mould Making Systems

Our recommended standard solutions

BÜFA®-Tooling System up to 80 °C with normal loads	BÜFA®-Tooling System up to 80 °C for heavier loads	BÜFA®-Tooling System up to 120 °C
BÜFA®-VE-Tooling-Gelcoat spraying or brushing quality	BÜFA®-VE-Tooling-Gelcoat spraying or brushing quality	BÜFA®-VE-Tooling-Gelcoat spraying or brushing quality
1 layer 150 g/m² powder-bonded glass fibre mat with 6 layers 300 g/m² power-bound, glass fibre mat wet-on-wet with BÜFA®-Resin UP 1974 Tooling	1 layer 150 g/m² mit 225 g/m² power-bound, glass fibre mat with Atlac 580 ACT	1 layer 225 g/m² power-bound, glass fibre mat with BÜFA®-Resin VEU 1978 HLU
followed intermediate curing	followed by 24 hours intermediate curing	followed by 24 hours intermediate curing
4 layers 450 g/m² power-bound, glass fibre mat wet-on-wet with BÜFA®-Resin UP 1974 Tooling	6 layers 300 g/m² power-bound, glass fibre mat wet-on-wet with BÜFA®-Resin UP 1974 Tooling	max. 2 layers 225 g/m² power-bound, glass fibre mat with BÜFA®-Resin VEU 1978 HLU
	followed intermediate curing	followed intermediate curing
	4 layers 450 g/m² power-bound, glass fibre mat wet-on-wet with BÜFA®-Resin UP 1974 Tooling	max. 2 layers 225 g/m² power-bound, glass fibre mat with BÜFA®-Resin VEU 1978 HLU

Mould making resins

Product name	BÜFA®-Resin UP 1974 Tooling	Atlac 580 ACT	BÜFA®-Resin VEU 1978 Tooling
Art. No.	700-1974	780-5800	700-1978
Application	hand lay-up and spray-up	hand lay-up	hand lay-up
Resin base	DCPD	BPA/VEU	BPA/VEU
Viscosity [mPa.s] – Spindle/rpm	1,150 -3/20	1,300	1,500 -3/20
Styrene content [%]	35	49	41
Peroxide / accelerator	2.0 % MEKP medium reactive, pre-accelerated	2.0 % MEKP medium reactive, pre-accelerated	2.0 % MEKP medium reactive + 0.5 % 742-0070, not pre-accelerated
Gel time [min]	42	30	32
Tmax [°C]	120	140	185
Tensile strength [MPa]	47	83	90
Tensile E-modulus [MPa]	5.6	3.5	3.5
Elongation at break [%]	1.8	4.2	3-4
HDT [°C]	80	115	145
Range of use / comments	GRP tooling. Practically shrink-free laminating resin with an LP additive	GRP tooling. Laminating resin for the first layer of glass	GRP tooling. Laminating resin for high temperature moulds up to 130 °C, construction of max. 2 layers of glass in one working operation

Mould Making Systems

Auxiliary Agents

Product name	BÜFA®-Release Laquer Nature	BÜFA®-Release Paste	BÜFA®-Release Wax Liquid	BÜFA®-Modelling Compound
Art. No.	741-0052	741-0054	741-0063	740-0004
Characteristics	Polyvinyl alcohol-based dissolved in ethanol/water	Based on synthetic wax and white spirit	Polyethylene wax dissolved in white spirit	Natural wax composition with fillers
	Mould release agent for use on plastic moulds, glossy after drying, tough PVA layer	For use on moulds made of plastic, wood, gypsum, etc., usually used with BÜFA®-Release Lacquer Nature	For use on complicated moulds made of plastic, wood, gypsum, etc., also often used with BÜFA®-Release Lacquer Nature	Permanently plastic modelling compound used in model and mould-making for filling hollow coves, closing voids and for modelling

This legend refers to the values of the tooling system category

Resin base	Reactivity	Viscosity	Accelerator	Mechanical values
VE - vinyl ester DCPD - dicyclopentadiene BPA - bisphenol A VEU - vinyl ester urethane	Reactivity values are orientation values measured on 100 g sample at 20 °C Gel time: Time from 20 °C to 30 °C (mean value) Tmax: Maximum temperature of the 100 g sample (mean value)	Mean value measures with Brookfield DV II at 20 °C Further values: e.g. measured with spindle 4 at 4 rpm (4/4)	742-00070 BÜFA®-Accelerator Complex 0070	Measured on cured, pure resin samples, conditioned according to the information given in the Technical Information Sheet Tensile strength according to ISO 527/2 Tensile E-modulus according to ISO 527/2 Elongation at break according to ISO 527/2 Heat distortion temperature according to ISO 75-A

The data given above is approximate information without warranty. The latest, detailed information is found in the respectively valid Technical Information Sheet and/or the corresponding EU Safety Data Sheet which should also be observed.