

FOR THOSE WHO ALWAYS
AIM FOR PERFECTION.

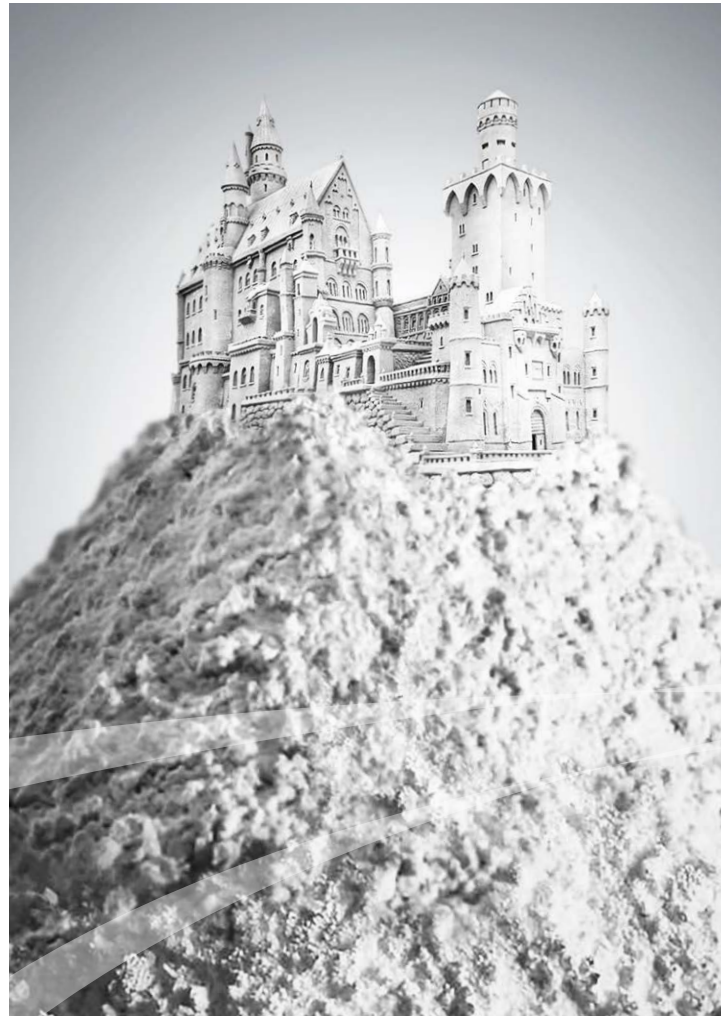
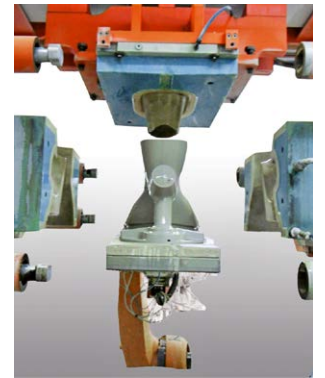


TABLE OF CONTENTS



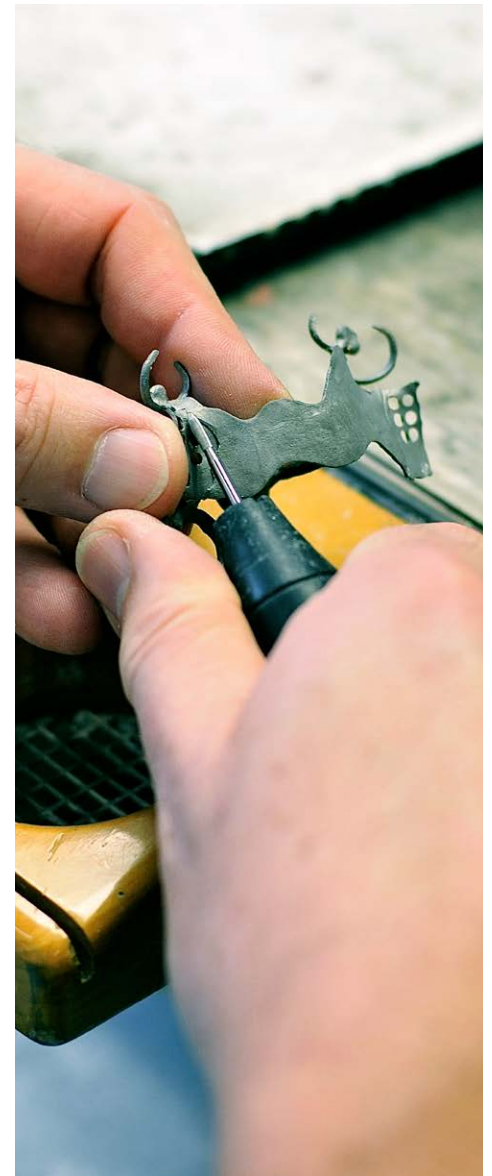
Our Promise _____	05
Solution Provider _____	07
History of our Business and Production Plant _____	09

Dental	10
Plasters _____	12
Investments _____	13
Duplicating Materials _____	14
Alloys _____	15

Gypsum and even more	16
Model Making _____	18
RAM - Pressure Casting Applications _____	19
Hobby _____	19
Industrial Applications _____	20
Jewellery _____	21
Food, Pharma, Brewery, Paint Industry _____	21
Supplementary _____	21

Gil-Resin®	22
Gil-Resin® Types _____	25
Gil-Resin® Mouldcare _____	26

GOOD WORK.



Perfect **results!**

With enthusiasm and engagement for our customers, our company and our products

SRL Dental GmbH, the successor of the past BK Giulini business unit Dental, has been manufacturing Dental plaster, investment powder and many more dental supply materials for more than 50 years.

SRL Dental GmbH runs a unique patented process to manufacture premium quality synthetic calcium-sulfate-alpha-hemihydrate. This provides us with the ability to formulate particularly high quality dental plaster for the fabrication of dentistry master models. In combination with innovative and first class dental investment powders SRL Dental is a global market leader of dental supplies.

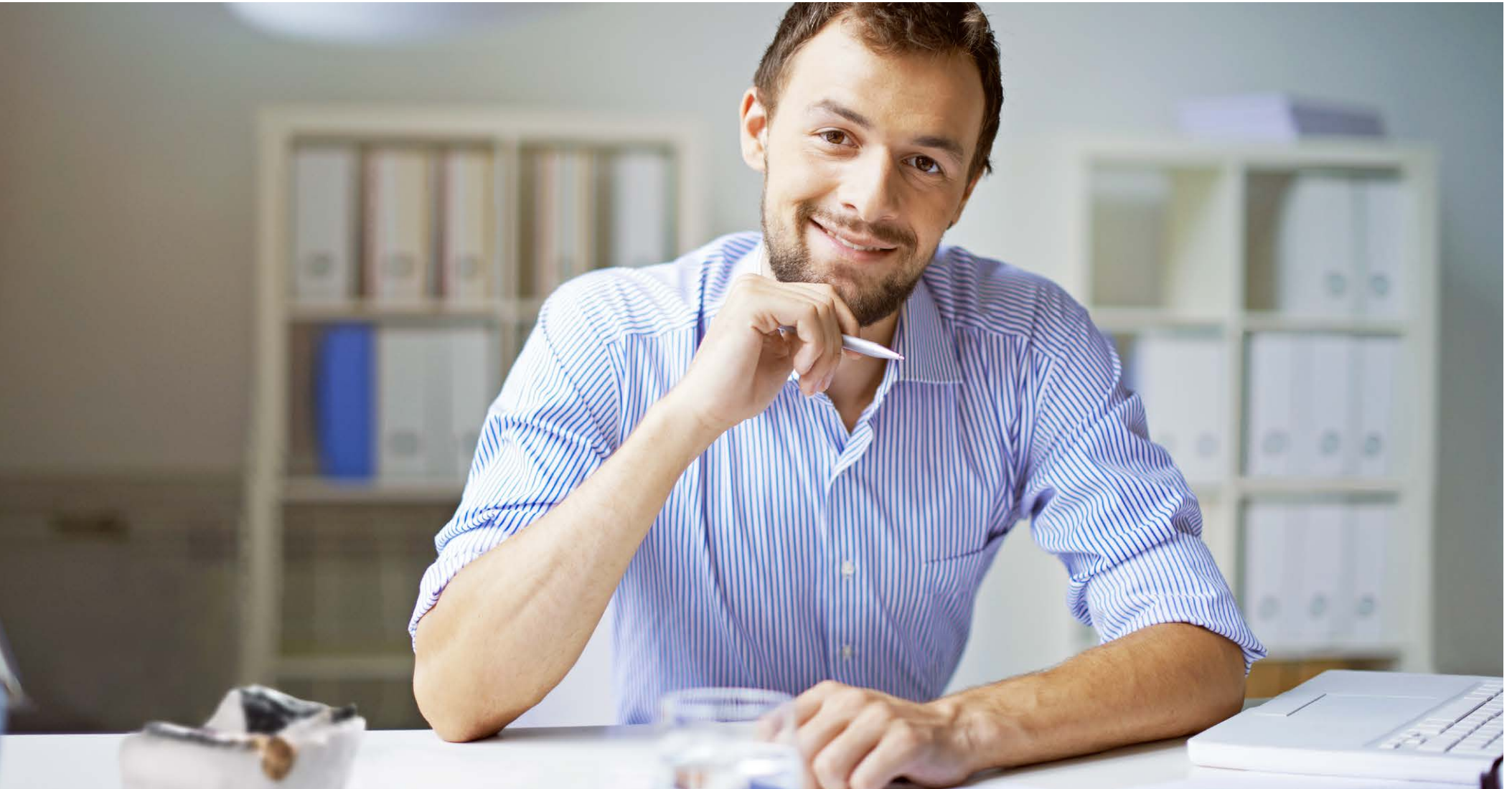
Our product portfolio offers a wide range of materials for dental restoration processes. Our non-precious Gialloy product range serves the traditional casting method as well as digital CAD/CAM technology. Thanks to our long term business relations and establishment of cooperation networks SRL Dental is marketing its own brand and private label products on a global basis.

SRL Dental's high class plaster and investment powder can serve more than the Dental sector. Our high quality products are also used for medical plaster formulations. Foundry, Hobby and Model Making are additional application areas for our product

range. Add-on specialties for the Ceramic industry are SRL Dental's porous high pressure casting resin products providing an extremely high number of casts.

Characterized by highly skilled and qualified personnel SRL Dental is focused on providing maximum customer benefits. Serving our clients' needs has top priority. Our integrated management system is based on the requirement profiles of ISO 9001, ISO 14001 and BS OHSAS 18001 as well as ISO 13485. SRL Dental is highly committed to honor legal requirements to continuously improve our quality, environmental and work safety management systems.

OUR FAVORITE PRODUCT: TRUST.



Many can produce basic materials. **A good reputation needs more.**

We supply more than “just” products to our customers in over 100 countries all over the world – we offer solutions.

SRL Dental products are distinguished by their high degree of purity and consistent quality while providing the means to focus production to suit specific customer requirements. These products are not mass produced goods but rather they permit tailor-made solutions for technical challenges.



SRL Dental produces materials for medical and dental applications, for the jewellery and casting industry, for the ceramics and model building sector, for decorating and hobby requirements as well as filling material usage.



Our prompt and comprehensive service requires direct contact with our customers and an efficient logistic network. SRL Dental GmbH, with its production site in Ludwigshafen, is situated in the heart of Europe, with direct access to the region's main air, water, road, and railway links.



SRL Dental GmbH has branch offices, subsidiaries, and agencies in countries throughout the world. Our international activities are focused on Europe, South East Asia, China, India and North America. We are also increasing our efforts in Australia, New Zealand, Africa, South America and Eastern European countries with the support of local sales offices and distributors.

IN THE PAST 200 YEARS WE'VE LEARNT
A LOT ABOUT OUR CUSTOMERS.



Plenty of time to continuously improve our products.

Chemistry – the birth of a modern science

The year **1774** was the year that chemistry was born as a modern science. The history of Giulini Brothers as a family company began some 50 years later, in **1823**, when a factory was built for the production of sulphuric acid on the basis of Sicilian sulphur.

Ludwigshafen – the place to be

In **1893** the company moved to its present site in the south of Ludwigshafen, often referred to as the town of chemistry.

The production of sulphuric acid was expanded, and the production of superphosphate and phosphoric acid started. Products on the basis of aluminium hydroxide became a further important component of the production programme.

In the middle of the **20th century**, the expansion of the company's traditional activities started with the concentration of research and development upon chemical specialties and their application, leading to completely new fields of activities: pharmaceutical raw materials, water

treatment, synthetic gypsum, food additives, chemicals for the paper industry and raw materials for the footwear industry.

The name changes, our experience remains

In **1977**, ICL – ISRAEL CHEMICALS LTD. took over the company and founded Giulini Chemie GmbH as their subsidiary. In the wake of the ensuing reorganization, application oriented business units were set up which have been the backbone of the company ever since.

Benckiser Knapsack GmbH (BK) was founded in **1967**, owned in equal parts by Joh. A. Benckiser GmbH and Hoechst AG. The common objective then was the consolidation of the production and marketing of phosphate specialties for detergents, food additives, water treatment, and for various other industrial applications. In the following years BK developed into a successful and renowned supplier of industrial specialties. In **1990**, Joh. A. Benckiser sold their shares to Hoechst AG and the company was renamed BK Ladenburg Gesellschaft für Chemische Produkte GmbH.

In **1996**, ROTEM-AMFERT-NEGEV LTD., a subsidiary of ICL, acquired BK Ladenburg. The result of this takeover was a far-reaching product integration for ROTEM-AMFERT-NEGEV LTD., ranging from phosphate rock in the mines of the Negev to fertilizers, green and food grade phosphoric acid, and phosphate specialties.

On January 1, **1997**, BK Ladenburg and Giulini Chemie have been merged to form BK Giulini Chemie GmbH & Co. OHG, a 100 % subsidiary of the ROTEM-AMFERT-NEGEV Group.

2006 ICL Performance Products business segment was created by consolidation of BK Giulini and ICL Performance Products LP.

A part of SRL Inc.

2015 Acquisition of business line Pharma – Cosmetic – Gypsum by SRL Inc., foundation of SRL Pharma GmbH and SRL Dental GmbH.

WORKING MATERIALS MOST WOULD
LIKE TO GET A BITE OF.





THIXO1DENT[®] ***ARTICULATING1PLASTER***[®]

GIL1DENT[®] ***GIL1DONT***[®] ***GIL1PLAST***[®] ***GILU1DUR***[®]

SEMI1ROCK[®] ***GIL1ALLOY***[®]
PURE EFFIZIENZ IN METALL ***SOCKEL1GIPS***[®]

TOP1ROCK[®] ***GIL1STONE***[®] ***GIL1ROCK***[®] ***GIL1VEST***[®]

GIL1DOUBLE[®] ***S***

GIL1DOUBLE[®] ***G***

Plasters

Based on its own patented process, SRL Dental GmbH has been producing synthetic gypsum for more than 50 years, meeting the most diverse and demanding requirements.

This specialty gypsum offers a wide range of important advantages. For instance, synthetic gypsum is physiologically safe, it guarantees outstanding surface reproduction and high dimensional accuracy.



TYPE 3 GYPSUM								
Product name	Mixing ratio	Working time [min]	Setting time [min]	Expansion [%]		Hardness 24 h [MPa]	Tensile strength 24 h [MPa]	Compressive strength 1 h [MPa]
				2 h	24 h			
Giludur	100:30	6	10	0.20	0.25	80	6	> 27
Giludur SK	100:30	7	12	0.20	0.25	70	6	> 25
Articulation Plaster	100:30	2	3.5	0.03	0.05	60	5	> 15
Gilortho	100:27	7	11	0.12	0.15	90	6	> 30
Giluplaster	100:50	3	8	0.20	0.20	-	-	-

Approximate values

Available Colours



Grey



Blue



Yellow-Brown



Golden-Yellow



Pink



White

TYPE 4 GYPSUM								
Product name	Mixing ratio	Working time [min]	Setting time [min]	Expansion [%]		Hardness 24 h [MPa]	Tensile strength 24 h [MPa]	Compressive strength 1 h [MPa]
				2 h	24 h			
Gilrock	100:20	7	12	0.10	0.15	250	8	> 55
Toprock	100:20	7	12	0.10	0.11	250	10	> 55
Thixodent	100:20	5-6	12	0.10	0.15	250	8	> 55
Gilplast	100:18/20	9	15	0.10	0.15	250	8	> 55
Gilstone	100:23	5	10	0.10	0.15	150	7	> 45
Gildont	100:25	5	8-13	0.10	0.15	140	7	> 35
Base Plaster	100:25	2	4-6	0.05	0.07	120	7	> 35
Base Plaster FL	100:23/25	> 5	10	0.08	0.12	130	7	> 40

Other product types and colours on request

Approximate values

Investments

Based on years of research and development, we have grown to become one of the leading manufacturers of casting investments. Today, our products are widely used throughout the world in the dental, jewellery and casting industries. The know-how gained enables us to develop market oriented products and formulations.



CROWN & BRIDGE INVESTMENT MATERIALS

Product name	Application field	Mixing ratio	Setting expansion	
			Liquid concentration	Range [%]
Gilvest HS	speed/overnight	24-26 ml	75 %	1.3 - 1.7
Gilvest HS PK	pressable ceramics	26 ml	75 %	0.6 - 1.0
Gilvest EHT SF	overnight	24 ml	75 %	1.4 - 1.8

PARTIAL/Framework INVESTMENT MATERIALS

Product name	Application field	Mixing ratio	Setting expansion	
			Liquid concentration	Range [%]
Gilvest MG yellow	overnight	gel 13, sil 15 ml	50 %	0.5 - 0.9
Gilvest MG Speed	speed/overnight	gel 18, sil 20 ml	50 %	0.45 - 0.70

LIQUIDS FOR PHOSPHATE-BONDED INVESTMENTS

Product name	Properties
Gilvest Liquid	Standard Liquid
Gilvest Liquid G	High Expansion Liquid

Duplicating Materials

SRL Dental offers a wide range of duplicating materials which are aligned with the special properties of our partial casting investment materials.

Auxiliaries such as aluminium oxide and glass beads in different grain sizes support the outstanding casting result.



SILICONE	
Giu-Sil	Addition-cured 1:1 duplicating silicone
Giu-Sil Putty	Addition-cured silicone putty

AGAR-AGAR	
Gildouble G	Reversible duplicating material for gypsum and gypsum-bound investments
Gildouble S	Reversible duplicating material for phosphate-bound investments

AUXILIARIES	
Aluminium oxide	White fused alumina in different particle sizes (50 μ , 110 μ , 125 μ and 250 μ)
Glass beads	Glass beads in different particle sizes (40-70 μ , 100-200 μ and 600-800 μ)
Gil-Dip	Dipping hardener
Gypsum Solvent	For easy cleaning of mixing bowls and acrylic dentures

Alloys

Our casting alloy product range covers all kinds of applications in the dental laboratory. They are customized to the needs of the patient and easy to process in the dental laboratory. In order to meet the high quality demands of technicians around the world, all our alloys are beryllium free and easy to use.

The cobalt chromium and titanium milling blanks are formulated to achieve unique milling properties and outstanding results.



All types of alloys and blanks are beryllium free	NICKEL BASED		COBALT BASED				MILLING BLANK	
	Bonding alloy		Bonding alloy		Partial/framework			
	CB-N	CB-NH hard	CB	CB-H hard	PA	PA-F hard	CB Blank	Ti-5 Blank
Standard	DIN EN ISO 22674							
COBALT (Co) [%]	-	-	61.6	60.0	61.6	62.5	61.6	Ti - 90
NICKEL (Ni) [%]	61.5	58.2	-	-	-	-	-	Al - 6
CHROME (Cr) [%]	25.9	27.3	27.8	24.7	30.1	28.5	27.8	V - 4
TUNGSTEN (W) [%]	-	-	8.5	9.0	-	0.6	8.5	C < 0.08
MOLYBDENUM (Mo) [%]	11.1	12.8	-	1.1	5.5	6.1	-	Fe < 0.25
OTHERS [%]	Si 1.5	Si 1.7	Si 1.6 Mn 0.3 Fe 0.2	Si 1 Fe 0.2 V 2.0 Nb 2.0	C 0.6 Si 1.0 Fe 0.6 Mn 0.6	C 0.5 Si 0.5 Mn 0.6 Fe 0.7	Si 1.6 Mn 0.3 Fe 0.2	H < 0.012 N < 0.05 O < 0.13
Hardness [VH 10]	185	240	285	350	460	420	285	> 300
Elongation [%]	26.5	> 5	14.7	> 2	> 2	> 2	14.7	> 8
Tensile strength [Mpa]	550	548	525	790	< 700	< 800	525	> 825
0.2 % Yield strength [Mpa]	340	342	375	> 500	> 500	> 500	375	> 760
Young's module [Gpa]	115	135	240	> 150	> 150	> 150	240	~ 160
Corrosion resistance	< 200	< 200	< 200	< 200	< 200	< 200	< 200	-
Coefficient of thermal expansion (25°-500°C) (10-6/K)	14.1	14	14.5	14.1	-	-	14.5	4.4
Melting interval [°C]	1325-1350	1310-1330	1410-1418	1370-1385	1320-1380	1355-1390	-	-
Density g/cm³	8.3	8.2	8.5	8.4	8.25	8.3	8.5	> 8
Pre-heating temperature of ring [°C]	910-940	920-950	910-940	960-980	910-950	930-950	-	-
Type	Type 3	Type 3	Type 4	Type 5	Type 5	Type 5	Type 4	Type 5

Other shapes and formulations on request

GYPSUM & EMBEDDING MATERIAL VARIETIES FOR AMBITIOUS AND SKILLFUL PERFECTIONISTS.





Gypsum

DISCOVER THE DIVERSITY OF OUR
SYNTHETIC GYPSUM & INVESTMENT PRODUCTS.

Model Making

Synthetic molding plasters with low expansion and high hardness, either for manual or machine molding, e.g. for CAD/CAM methods. We also offer moulding plaster for ceramic applications with an extremely low expansion.

RAM – Pressure Casting Applications

Our product portfolio offers moulding materials for working moulds made of plaster. For instance plaster for RAM pressing with a high water removal and absorption capability which in addition provides an above average surface hardness and low expansion values.

Hobby

Casting compounds for the production of reliefs, sculptures or models. Our product portfolio also includes ultra-light grades as well as modelling bandages for hobby and industrial applications.

Model Making

AREA OF APPLICATION	PRODUCT	MIXING RATIO	PROCESSING TIME (MIN)	SETTING TIME (MIN)	EXPANSION 24 H (%)	HARDNESS	PRESSURE RESISTANCE	BENDING TENSILE STRENGTH
Easy to spread	Ludur SK	100:28	> 30 spreadable	< 60	< 0.1	****	****	****
Easy to spread with glass fibre	Ludur 500 M	100:25	> 40 spreadable	< 70	< 0.1	****	****	*****
Reinforcement material	Ludur 500 SP	100:25	ca. 10	< 16	< 0.2	*****	*****	*****
For embedding of optical glasses	Ludur OW	100:55	> 10	< 20	< 0.03	-	3.5-4.5	1
For the production of copy models. postprocessable	Ludur O SP1	100:45	ca. 15	< 25	< 0.06	-	-	-
Washable high temperature resistant core and moulding material	Ludur WA	100:48	> 5	< 20	-	-	-	-
Cutting & machining	Ludur MW	100:40	> 10	< 30	< 0.20	-	-	-



RAM – Pressure Casting Applications

PRODUCT		MIXING RATIO	PROCESSING TIME [MIN]	SETTING TIME [MIN]	EXPANSION 24 H [%]	HARDNESS	ABSORPTIVE POWER
Alpha	AS-Dur K	100:33	> 15	< 27	< 0.2	*****	****
Alpha/Beta	AS-DUR AB	100:35.7	> 15	< 27	< 0.2	****	*****
Alpha	Sanicast MVV	100:30	> 15	< 27	< 0.2	*****	****
Alpha/Beta	Sanicast MVV AB35	100:31	> 20	< 30	< 0.2	****	*****

Hobby

PRODUCT		MIXING RATIO	PROCESSING TIME [MIN]	SETTING TIME [MIN]	DEGREE OF WHITENESS [%]	DEGREE OF YELLOWNESS [%]	HARDNESS
Crystal white	Ludur KW	100:25	> 14	< 25	> 91	< 3.5	****
Brilliant white	Giluforn BW	100:25	> 6	< 12	> 89	< 4.5	*****
Extra white	Giluforn SP16	100:28	> 12	< 20	> 89	< 5.5	****
	Giluforn 350	100:28	> 12	< 20	> 83	< 6	****
	Giluforn 250	100:40	> 10	< 20	> 86	< 5.5	***
Weight reduced hobby gypsum dry approx. 1.25 kg/l	Giluforn Light	100:35	> 10	< 25	-	-	-
Flexible moulding material	Gilalgin H	20:40	-	4-6	-	-	-

Industrial Applications

Hard moulding gypsum for making finished parts and for quality enhancement of beta calcium sulphate hemihydrate and anhydrate. Can also be processed with additives like quartz powder, calcium carbonate, or with cement.

We also provide calcium sulphate for modelling, optical, construction and technique applications.

Jewellery

We offer a complete portfolio of plaster and phosphate-bound investment compounds for precision casting as well as investment compounds for jewellery and art casting. Our investment compounds produce beautiful and smooth surfaces with excellent detail reproduction.

Food, Pharma, Brewery, Paint industry

This product line offers calcium sulphate dihydrates as fillers for pharmaceutical products and synthetic special plasters for the production of plaster bandages.

Our calcium sulphates are also used in the food industry when a defined dissolution of calcium is desired.

Supplementary

Our outstanding calcium sulphate dihydrates can be used as fillers for a large range of technical products and applications.

Our calcium sulfates are the first choice wherever constant quality and a very high degree of whiteness and purity is required.

Industrial Applications

AREA OF APPLICATION	PRODUCT	MIXING RATIO	PROCESSING TIME [MIN]	SETTING TIME [MIN]	TENSILE STRENGTH	COMPRESSIVE STRENGTH	EXPANSION [%]
For patterns	Gilvac 150	100:70	ca. 10	ca. 20	> 1	> 3	< 0.1
Low pressure casting	Gilcast ND	100:28	ca. 10	ca. 20	> 1.5	> 5.5	< 0.5
Rubber and tire mould industries	Gilcast ND SP	100:28	ca. 10	ca. 20	> 2	> 7	< 0.2
Aluminium and magnesium casting	Gilcast AM	100:28	ca. 10	ca. 20	> 1.5	> 5.5	< 0.5
Aluminium casting	Gilcast AL SP	100:28	ca. 10	ca. 20	> 1.5	> 7	< 0.5
Art casting	Gilcast SP1	100:38	> 8	< 20	> 1	> 3.5	-
Art casting	Gilcast SP20	100:38	> 16	< 25	> 1	> 4.0	-
Core material easy removable	Gilcast KM	100:28	> 10	< 25	> 1.5	> 5	< 0.25
Foam gypsum for aluminium casting	Ludur SG	100:83.5	> 10	< 25	> 1	> 3	< 0.03
Phosphate-bound investment	Gilvest T	100:26	> 5	< 15	-	-	< 0.1

Jewellery

PRODUCT	MIXING RATIO	PROCESSING TIME [MIN]	SETTING TIME [MIN]	HARDNESS	SURFACE	DIVESTING
Gilcast S SP3	100:38	ca. 10	< 20	****	****	****
Gilcast S MC	100:38	ca. 10	< 20	***	****	*****
Gilcast S ER	100:38	ca. 10	< 20	****	*****	*****
Gilcast HS Soft	100:38	ca. 10	< 20	*****	****	****

Food, Pharma, Brewery, Paint Industry (Calcium-Sulfate Dihydrate)

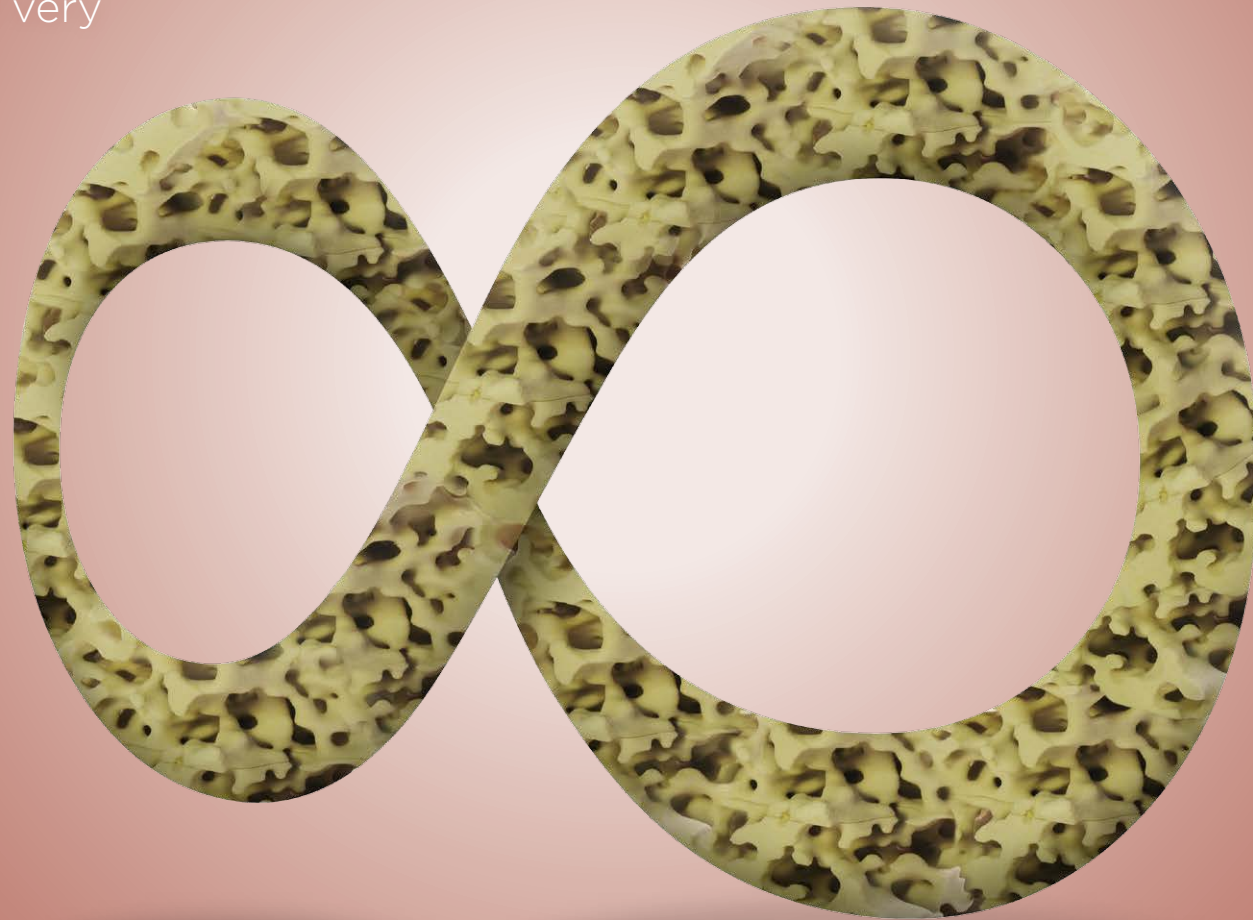
PRODUCT	SIEVING [MM]	DEGREE OF WHITENESS	DEGREE OF YELLOWNESS	BULK DENSITY	PACKAGING
Luxolan	1	> 95	< 2	ca. 800 g/l	25 kg, 1t BB
Luxolan BG	0.3	> 95	< 2	ca. 800 g/l	25 kg, 1t BB
Luxopharm	0.1	> 95	< 2	ca. 800 g/l	25 kg, 1t BB

Supplementary (Calcium-Sulfate Hemihydrate)

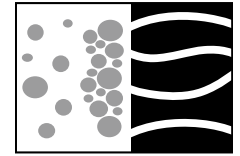
PRODUCT	MIXING RATIO	SETTING TIME [MIN]	DEGREE OF WHITENESS	DEGREE OF YELLOWNESS	BULK DENSITY	PACKAGING
Ludur G	100:33	6-20	> 95	< 2	ca. 1050 g/l	25 kg, 1t BB
Ludur P	100:33	6-20	> 93	< 3.5	ca. 1300 g/l	25 kg, 1t BB
Ludur HW	100:33	3-20	> 91	> 4	ca. 1000 g/l	25 kg, 1t BB
Medical Gypsum	100:50	3.5	> 95	< 2	ca. 900 g/l	25 kg, 1t BB

QUALITY THAT LASTS AND LASTS.

For a smooth result with high pressure casting, even at very high output.



Even with the best material there's a lot that can go wrong. **But not with us.**



Gil-Resin®

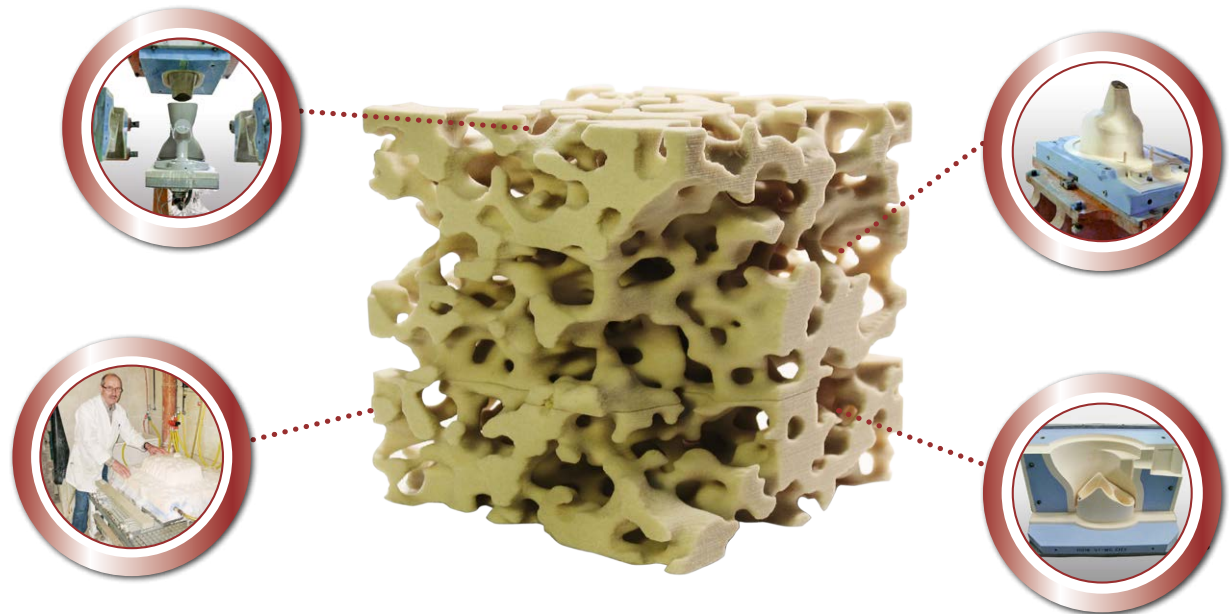
With high pressure casting the cost of experience in capital and time can be extremely high. Why not simply ask us instead?

No one has more experience in this field.

After all, our company has been involved for almost 200 years. But mainly our ability is due to outstanding staff with a talent for perfection in their chosen skills. This means that in cooperation with the world-famous mould forming specialist MASSFORM GmbH we offer our customers something very unique: The most valuable experience in the market.

Your requirement: Long working life even with frequently changed moulds. Ours too.

Mould manufacture needs experience, choosing the right material, too. We advise our customers on best compatibility of our respective high pressure casting and slipcast qualities. After all, the working lifetime of your process will only be acceptable when everything matches.



The correct pore size for every application.

Real high pressure casting competence. Not just theory.

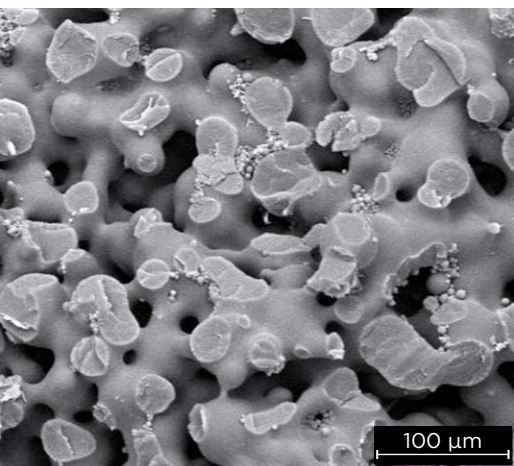
Real competence doesn't just mean knowing what to do. It also means complete awareness of the final result – especially in the long term. This is the only way to ensure confident investment in high pressure mould production.

Don't correct mistakes. Avoid making them. A worthwhile investment.

Even the smallest mistake in mould conception and manufacture takes its revenge later on. And limiting the damage once the process is underway is very difficult. Expensive moulds develop cracks and need extra investment in

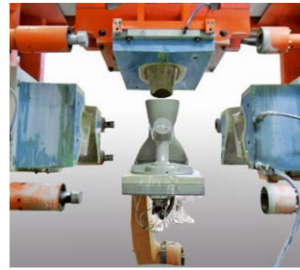
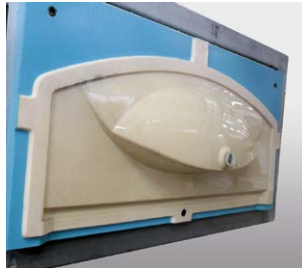
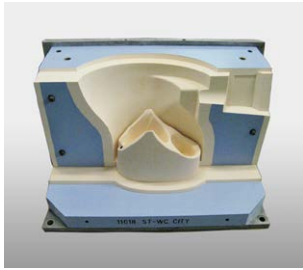
complicated repairs to the broken pieces or working mould. This threatens the profitability of the whole plant.

Our partner MASSFORM GmbH can step in right from the start and help you make the right decisions – or take over the mould manufacturing itself.



Gil-Resin®. The right choice for:

- Unchanging excellence
- Reproducibility of mould quality
- Even pore distribution
- High dimensional accuracy
- Great strength
- Best filtration characteristics
- Limited shrinkage (with polymerisation)



Sanitary and Table Ware Industry – Pores made to measure

ATTRIBUTES OF GIL-RESIN®	SPECIAL FEATURES			MEAN PORE RADIUS [µM] *	POROSITY [VOL.-%] *	FLEXIBLE STRENGTH [N/MM²]	COMPRESSIVE STRENGTH [N/MM²]	FLOW RATE [L/MIN] **
	Water absorption	Resistance	Surface finish					
Gil-Resin® S	+++	++++	++	24-30	27-32	25-30	45-50	8-12
Gil-Resin® SA+	+++	++++	+++	19-25	27-32	25-30	50-55	7-11
Gil-Resin® T	++	+++	++	8-13	27-32	18-24	42-47	3-5
Gil-Resin® TA+	++	++	+++	8-14	27-32	16-22	38-43	3-5
Gil-Resin® TE+	++	++	+++	7-14	27-32	14-20	36-41	3-6
Gil-Resin® F+	+	++	++++	4-7	27-32	13-19	35-40	1-2

* Determined with mercury porosimetry | ** Water test method at 2.0 bar water pressure

The new **standard setting** non-acidic cleaner.

Gil-Resin® Mouldcare

SRL Dental GmbH presents its new development GIL-RESIN® Mouldcare, a product for cleaning resin moulds (plastic die-cast moulds) for the ceramic industry. GIL-RESIN® Mouldcare is designed to clean the pores, capillaries, and surfaces of polyacrylate diecast moulds.

- Prevents & eliminates persistent contamination
- Prolongs the durability of the mould
- Long lasting cleaning efficiency
- pH-neutral
- Non-hazardous & environmental friendly
- Dilutable with water in any ratio

Our new
**non-acidic
cleaner**



LET'S TALK ABOUT QUALITY.
RIGHT NOW.



Giulinistrasse 2 | D-67065 Ludwigshafen

Phone + 49 621 5709-6991 | Fax + 49 621 5709-6489

Internet www.srl-dental.com | E-Mail srl-info@summitresearchlabs.com

