

## Innovative lubricants need experienced application engineers

Every lubricant change should be preceded by expert consultation on the application in question. Only then the best lubricant system can be selected. Experienced FUCHS engineers will be glad to advise on products for the application in question and also on our full range of lubricants.



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## Lubricants for Glass Manufacturing Industries



**LUBRITECH**  
Special Application Lubricants

# LUBRICANTS. TECHNOLOGY. PEOPLE.

## FUCHS LUBRITECH – Special Application Lubricants

We focus consistently on high-quality lubricants and related specialties. We develop innovative and holistic solutions for a wide variety of applications. We value the high level of commitment of our employees and their trusting interaction with one another.

## **LUBRITECH** *Special Application Lubricants*

### Facts and Figures

**Company:** FUCHS Lubricants (UK) plc, part of the FUCHS Group, based in Hanley, Stoke-on-Trent, England.

**LUBRITECH:** the Special Application Division of the FUCHS Group

**Product range:** LUBRITECH GROUP offers a full range of more than 1,000 special products, including food grade lubricants, adhesive lubricants, lubricating fluids and greases, pastes, solid film lubricants, concrete release agents, aerosols and metal-forming lubricants

**Certifications:** ISO 9001: 2008, ISO 21469, Halal, Kosher.

FUCHS has developed, produced and sold lubricants and related specialties for more than 80 years – for virtually all applications and sectors. With over 100,000 customers and 50 companies worldwide, the FUCHS Group is the world's leading independent lubricant supplier.

Within the FUCHS Group, FUCHS LUBRITECH is the expert for Special Application Lubricants. A team of more than 500 specialists around the world work to meet your needs. However demanding the application, we offer a specialised solution. Service is a crucial and fundamental component of our offering. Our experts offer on-site technical consultation to assure performance, efficiency and process reliability.

FUCHS LUBRITECH special application lubricants stand for highest performance and sustainability, safety and reliability, and efficiency and cost savings. They represent a promise: **technology that pays back.**



## VITROLIS - LUBRICANTS FOR GLASS MANUFACTURING INDUSTRIES

The VITROLIS product line of FUCHS LUBRITECH offers a comprehensive range of high-performance lubricants for the glass manufacturing industries, including container glass, tableware, float glass and pharmaceutical vials and tubes. Each product's composition is always optimised to ensure maximum suitability and efficiency for the respective application.

This catalogue introduces our portfolio and gives an overview of the wide range of VITROLIS products.

Our industry experts of the LUBRITECH team or your local sales partner will be happy to assist you in finding the best products for your application. You will receive individual, competent advice and recommendations on the products that are best suited to fulfilling your particular requirements.



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## Industries Served



The manufacture of glass represents one of the most severe challenges for production lubricants. The combination of demands from extreme temperatures, minimal residue formation, long re-lubrication intervals and high speeds, with the desire for optimum process efficiency, demand highly advanced technical solutions from lubricant manufacturers.

These demands are met by the VITROLIS range of lubricants from FUCHS LUBRITECH.

VITROLIS is the new global brand name for the specialist application lubricants designed by FUCHS LUBRITECH for the glass manufacturing industries. Each VITROLIS product is specifically designed to meet the exacting demands of a critical lubrication point within the glass manufacturing process.

### Why VITROLIS?

In general, glass manufacturers for containers, tableware, float or pharmaceutical products succeed based on the quality of the product they produce, and the efficiency with which they produce them.

Without adequate "key stage" lubrication, the production process will not be optimised. Quality, productivity and rejection rates are all directly proportional to the quality of lubricant used at each key stage, and VITROLIS lubricants are designed to optimise each key stage process regardless of industry.



### Container & Tableware Glass

FUCHS LUBRITECH researches constantly to increase performance and offer optimum lubricating fluids for maximum safety in all applications.

FUCHS LUBRITECH can offer a full line supply solution for all lubrication and grease requirements in container and tableware. The manufacture of container glass is a speciality of the FUCHS LUBRITECH organisation. Based on many years' experience working with global manufacturing groups, the VITROLIS range includes products for "key stage" applications including:

- Shear Spray
- Delivery Coatings
- Delivery Lubricants (Scoop Oils)
- Pre-Coats (Moulds)
- Swabbing Compounds
- I.S. Machine Lubricants
- Ring Dopes
- Cold End Coatings

### Float & Automotive Glass.

The careful processing of float and automotive glass has unique requirements. Dependent on the thickness or type of glass including ceramic, hardened or automotive, the process has unique requirements for lubricants. The VITROLIS range includes products for "key stage" applications including:

- Evaporative Cutting Fluids
- Synthetic Drilling Fluids
- Synthetic Edge Grinding Fluids
- Optical Grinding

### Pharmaceutical/Medicinal Glass

With ever increasing stringent requirements from manufacturers of pharmaceutical and medicinal packaging, FUCHS LUBRITECH's range of VITROLIS lubricants focus on ultra low residue formation and NSF-H1 approved process lubricants to meet all requirements of the pharmaceutical/medicinal industry for vial forming, ampoules and cartridges.



## CENTRE OF COMPETENCE

FUCHS LUBRITECH recognises the importance of specialist lubricant technology for the glass industry, and invests extensively in research and development to support its customers.

FUCHS LUBRITECH recognises the importance of specialist lubricant technology for the glass industry, and invests extensively in research and development to support its customers. A global glass "centre of competence" to focus entirely on the study of glass manufacturing lubricants has been established to ensure constant development of our product portfolio in line with industry trends and demands.

The centre includes industry experts with many years' industry experience, as well as state of the art research equipment to refine and develop formulations in conjunction with our customers' specific demands, environmental or legislative trends.

Through the centre we are able to offer a wide range of services including:

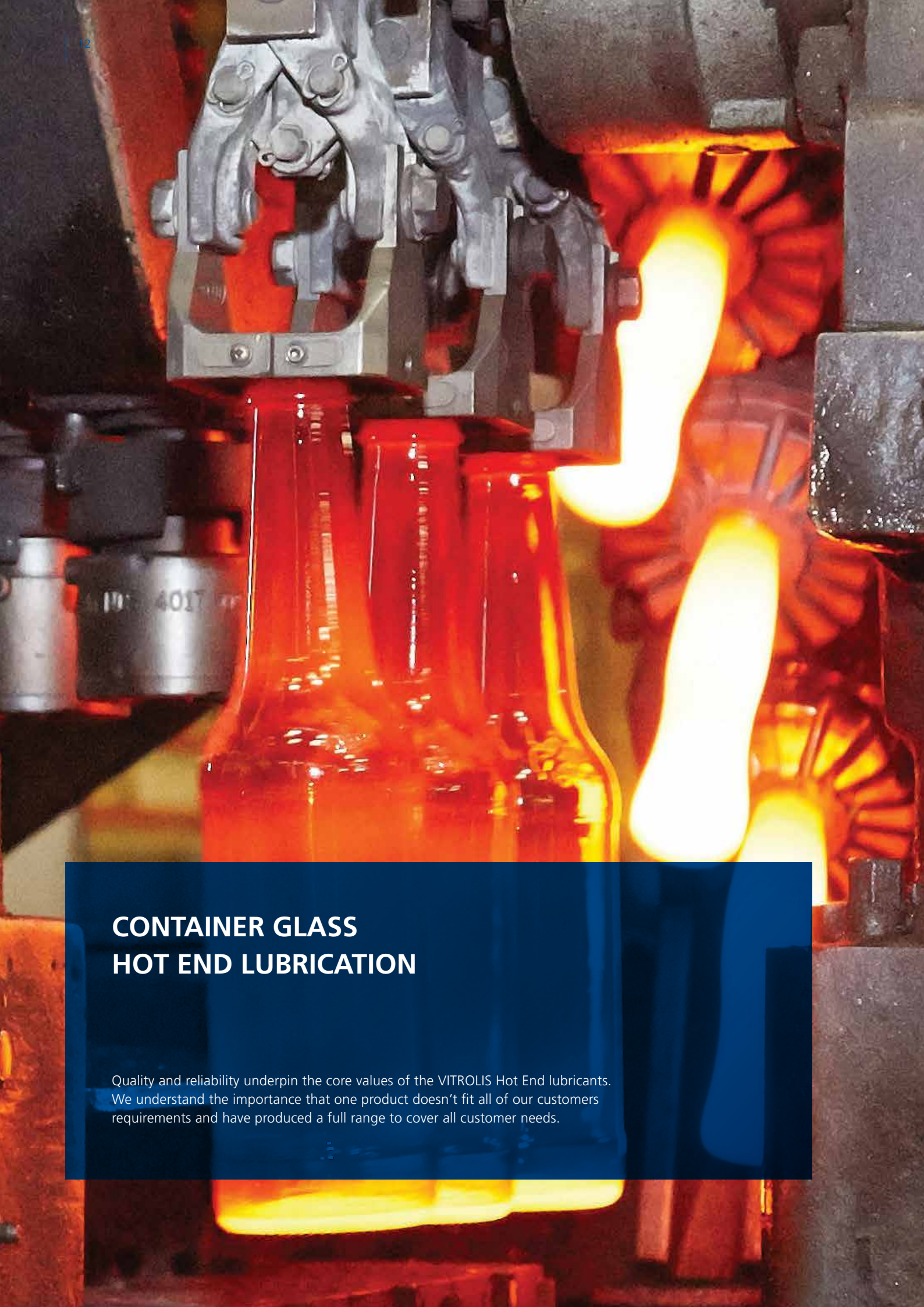
- Customer specific research and development.
- Glass defect analysis.
- Problem solving and troubleshooting.
- Detailed lubricant condition monitoring.

### SWAB School

Specifically for container and tableware manufacturing, our Centre of Competence can offer personalised on-site Swab "schools" to educate in the most efficient methods of applying swabbing compounds, as well as shear spray condition monitoring programs, and plant lubrication surveys to optimise lubrication practices from storage to disposal.







## CONTAINER GLASS HOT END LUBRICATION

Quality and reliability underpin the core values of the VITROLIS Hot End lubricants. We understand the importance that one product doesn't fit all of our customers requirements and have produced a full range to cover all customer needs.

FUCHS LUBRITECH's extensive range of hot end lubricants covers all the requirements of container manufacture. Swabbing, shear, synthetic machine oils, delivery lubricants and coatings form the core product offerings for the container manufacturing industry.

These products are globally used within all major container manufacturers.

### Overview of Container Glass Hot End Lubrication:

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## LUBRICATION

### I.S. MACHINE OIL

The VITROLIS range has been benchmarked against leading market competitors and optimised in various viscosity grades to offer users guarantees of performance and satisfaction from I.S. Machine operation.

VITROLIS I.S. Machine oils are used extensively globally and are formally approved by many leading I.S. Machine OEM's. The quality of VITROLIS I.S. Machine oil is confirmed by the use of products in technical training centres and research centres of I.S. Machine OEM's globally.

#### VITROLIS I.S. Machine oils offer the following key performance benefits:

- Extended re-lubrication intervals against mineral and synthetic alternatives due to lower evaporation and improved thermal stability.
- Cleaner operating conditions and reduced maintenance due to lower carbon and residue formation than competitor products.
- Higher levels of machine reliability and consistency in manufacturing output.
- Reduced maintenance and house-keeping requirements including handling, storage and disposal costs.
- Available with UV tracer for leak detection on systems.

Product Name	Description	Base Type	Notes
VITROLIS IS X100	ISO 100 synthetic ester based oil recommended for machine servo systems.	Synthetic Ester	Optional in extreme low temperature environments where standard ISO220 is too viscous.
VITROLIS IS X150	ISO 150 synthetic oil for all I.S. Machine lubrication systems	Synthetic Ester	Optional in low temperature environments where standard ISO220 is too viscous.
VITROLIS IS X220	ISO 220 synthetic oil for all I.S. Machine lubrication systems.	Synthetic Ester	Optimum performance I.S. Machine Lubrication Oil. Approved and meets specifications of most leading I.S. Machine OEM's.
VITROLIS IS X220 H	ISO 220 synthetic oil for all I.S. Machine lubrication systems.	Synthetic Ester	Elevated temperature flash point and optimum machine performance.

## SHEARING AND DELIVERY

### SHEAR SPRAY LUBRICANTS

	Product Name	Description	Dilution Ratio	Base Oil	Water Quality
The VITROLIS range of shear spray lubricants are designed to extend shear blade life, improve shear cut performance and to be easily maintained. The shear blades are in direct contact with the molten glass and therefore excellent cooling and lubrication is required to ensure consistency in gob geometry. The products are designed to operate at high dilution levels with minimum build up on blades, are biodegradable and have excellent thermal and hard water resistance.	VITROLIS SHEARLUBE S	Soluble Oil for recirculating/ recycling dosing systems.	< 300 to 1	Petroleum	Softened water recommended.
	VITROLIS SHEARLUBE 722X	Cost effective product for use with precise dosing systems.	< 1500 to 1	Synthetic, Vegetable	Softened water recommended.
	VITROLIS SHEARLUBE GSI	High performance product for use with precise dosing systems.	< 900 to 1	Synthetic, Vegetable	Softened water recommended.
	VITROLIS SHEARLUBE 3344	Suitable for all types of dosing systems.	< 1250 to 1	Semi-Synthetic	Softened water recommended but not required.
	VITROLIS SHEARLUBE B	Fully Biodegradable mineral oil free shearspray lubricant.	700 to 1	Synthetic	Hard or soft water.

### DELIVERY LUBRICANTS

	Product Name	Description	Base Oil	Application
Often referred to as "scoop oils" or "gob accelerator lubricants", the VITROLIS delivery lubricants are designed to reduce co-efficient of friction, keep delivery equipment clean and to ensure constant and uniform delivery of the gob to moulds.	VITROLIS DL LIGHT	Water white delivery oil. 32 cst.	Highly refined white mineral oil	Spray or drip feed. Optimise between 300 – 500 cuts.
	VITROLIS DL HEAVY	Water white delivery oil. 68 cst.	Highly refined white mineral oil	Spray or drip feed . Optimise between 300 – 500 cuts.
	VITROLIS DL WG	Non-flammable, water based.	Water/Glycol	Spray or drip feed. Optimise as required.

### DELIVERY COATINGS

	Product Name	Description	Application Rate	Notes
VITROLIS DC is designed to bond to the surface of troughs and deflectors to ensure optimum production efficiency. They provide a consistent co-efficient of friction to ensure that gobs are delivered at a constant speed, insulates the gob from excessive heat loss and eliminates the transfer of particle matter to ensure against checks and inclusions.	VITROLIS DC	2 pack graphite dispersion in high temperature resistant epoxy resin.	Apply within 1 hour	To optimise dry at 80-120C for 1-2 hours.



## MOULD SWABBING COMPOUNDS

### SWABBING COMPOUNDS

	Product Name	Description	Solid Content	Sulphur Content	Notes
The VITROLIS swabbing compounds have been developed through extensive co-operation with the world's leading glass container manufacturers. Through correct application*, VITROLIS products are proven to reduce levels of defect and improve clarity and quality of items produced.	VITROLIS MM 3000	Universal grade suitable for beer, wine, spirit, pharmaceutical, cosmetic and perfume bottles.	5-6%	4-5.5%	Product can be used on BB, PB and NNPB operations on a range of coloured and flint glass ware with medium to heavy gob weights.
	VITROLIS MM 3010	Intermediate grade combining high load capability and cleanliness of operation.	3-4%	4.5%	Hybrid swabbing compound with mid-range graphite content proving to be very successful in producing cleaner brighter ware without the levels of residue and carry over seen from High Graphite content products.
	VITROLIS MM 3020	Formulated for where cleanliness and surface glass clarity are important such as high quality wine and spirits containers, pharmaceutical, food and cosmetic jars.	1.5-2.5%	4-5.5%	Particularly suitable for production of thin wall/light weight containers by NNPB production methods.
	VITROLIS MM Spray	Designed for use in Autoswab Machines for IS Machine Blank Moulds.	3-5%	3.5-4.5%	Benefits include longer swab cycles, lower rejects, Improvement in Gob Loading and brighter container aspect.

\* Please ask for guides or training on correct swabbing methods

### PRE-COATS

	Product Name	Description	Application Rate	Notes
Pre-coats are often applied to blank and mould equipment to improve productivity following mould changes. VITROLIS SPC pre-coats react immediately at room temperature and apply a lubricating film proven to provide excellent gob loading, parison release and to reduce or eliminate cracking and rejection. The product is designed to eliminate the need for swabbing during start up procedures.	VITROLIS SPC 100 S	Aerosol Spray. Dry-film blank mould pre-treatment.	0.2mm to 0.5mm. Apply from a distance of 30cm.	Ensure clean mould. Touch dry within 2 minutes. For best results 4-6 hours curing.
	VITROLIS SPC 100 L	Liquid. Dry-film blank mould pre-treatment.	0.2mm to 0.5mm. Apply from a distance of 30cm.	Ensure clean mould. Touch dry within 2 minutes. For best results 2-4 hours curing.

### RING-DOPES

	Product Name	Description	Solid Content	Sulphur Content	Notes
Ring Dopes, or neck ring lubricants are designed to penetrate into ring surfaces to provide additional lubrication and release characteristics. VITROLIS products have been optimised in terms of viscosity and solid content to optimise process efficiency.	VITROLIS NRL 46	Lubricant and release agent for neck rings.	1.4%	4-5%	Designed for NNPB process but can be used on BB and PB operations by applying a slightly lighter film.

### ANTI CHECKING LUBRICANTS

	Product Name	Description	Application Rate	Notes
VITROLIS Mould Compounds are uniquely designed with fine colloidal graphite particles and specialist wetting agents to eliminate any issues with checks, incisions or imperfections in the swabbing process.	VITROLIS ACX	Prevents occurrence of cracks or incisions in swabbing process.	Can be applied to blow moulds or bottom plates.	Apply undiluted with appropriate brush/equipment.
	VITROLIS FO/G	Colloidal graphite, low viscosity oil, burning totally without residue.	Especially suited for lead glass and moulded tableware	Apply undiluted through spraying.







## COLD END COATING & SPECIALITY PRODUCTS

To compliment the extensive hot end range of lubricants for glass container manufacture, FUCHS LUBRITECH offers cold end coatings with a full range of speciality lubricants and greases targeting all other key mechanisms for container manufacture.

### Overview of Cold End Coating & Speciality Application products:

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## COLD END COATING

Product Name	Description	Application Rate	Notes
VITROLIS CEC	Sprayable coating for application directly onto containers as they exit the lehr.	Designed for use between 80-120C. Dilute at max 1:100 ratio.	Product is manufactured from food safe ingredients in areas that comply with GMP Practices and are Kosher and Halal certified.

## GOB DISTRIBUTOR

Product Name	Description	Application Rate	Notes
GLEITMO 705	Special high solid content paste based on synthetic oil to provide excellent lubrication characteristics and anti-seize properties.	Suitable for use up to 1000°C.	To lubricate sliding areas and ensure proper positioning, the use of a high temperature paste is recommended for the gob distributor mechanism.

## TAKE OUT ARM

Product Name	Description	Application Rate	Notes
GLEITMO 591	Long-term lubricating grease based on PFPE oil and PTFE which has been specifically designed for high-temperature lubrication.	Suitable for use up to 260°C. Improved protection against oil separation and to ensure the reliability of the bearings.	Ensure any previous greases are fully cleaned and removed prior to application.

## BEARINGS - CONVEYORS &amp; CROSS BELTS

Product Name	Description	Application Rate	Notes
GLEITMO 591	Long-term lubricating grease based on PFPE oil and PTFE which has been specifically designed for high-temperature lubrication.	Suitable for use up to 260°C. Improved protection against oil separation and to ensure the reliability and consistency in performance of gears.	Ensure any previous greases are fully cleaned and removed prior to application.

## CONVEYOR BELT CHAIN

Product Name	Description	Application Rate	Notes
STABYLAN MO 3001	Fully synthetic high-temperature chain oil with high thermal stability. Contains solid lubricants.	Suitable for use up to 220°C.	For conveyor and drive chains, especially suited to inverted tooth chains.

## CONVEYOR BELT

Product Name	Description	Application Rate	Notes
MOLYPAUL 994	Water based graphite lubricant that is sprayed or brushed onto the conveyor belt.	Suitable for use up to 800°C.	Imparts a graphite film that help reduce bottle damage.

## TRANSFER PLATE - ANNEALING LEHR CONVEYOR

Product Name	Description	Application Rate	Notes
CASSIDA PTFE DRY SPRAY	Synthetic PTFE multi-purpose and maintenance lubricant.	Spray directly onto the transfer plate for a thin and evenly dispersed surface coating	Eliminates vibrations. 3-5 times longer life than sliding oils and requires no cleaning. H1 approved.

## COLD END LUBRICANTS

FUCHS LUBRITECH can offer a full range of cold end lubrication/coating for all glass container plants from standard mineral oil based product to fully synthetic lubricants and the globally recognised NSF-H1 approved CASSIDA range of food grade lubricants.



## PHARMACEUTICAL & FLAT GLASS

The manufacture of high quality Pharmaceutical and Medicinal ware has long been a specific focus for FUCHS LUBRITECH. We understand the stringent requirement of providing consistent high quality products to the pharmaceutical industry from standard level to tailor made H1 approved lubricants via our ISO 21469 approved manufacturing facilities.

### Overview of Pharmaceutical & Flat glass:

<b>Pharmaceutical/Medicinal Glass</b>	VITROLIS VIALFORM 45/25 .....	24
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	VITROLIS GM .....	24
<b>Synthetic Drilling Fluids</b>	VITROLIS DG .....	25
	VITROLIS HF BF .....	25
	VITROLIS HF .....	25
<b>Synthetic Edge Grinding Fluids</b>	VITROLIS FS .....	25



## PHARMACEUTICAL

### PHARMACEUTICAL/MEDICINAL GLASS

	Product Name	Description	Viscosity at 40°C	Flash Point	Notes
The manufacture of high quality pharmaceutical and medicinal ware has long been a specific focus for FUCHS LUBRITECH. We understand the stringent requirement of providing consistent high quality products to the pharmaceutical industry from standard level to tailor made H1 approved lubricants via our ISO 21469 approved manufacturing facilities.	VITROLIS VIALFORM 45/25	Oil for the manufacturing of vials and ampoules.	220cst	>200°C	Oil combination for moulding vials and ampoule neck openings.
	VITROLIS PC	Mould swabbing compound for small pharmaceutical ware.			Low deposit formation and improved surface clarity of pharmaceutical ware.

## FLAT GLASS - FLOAT & AUTOMOTIVE

### EVAPORATING CUTTING FLUIDS

	Product Name	Description	Viscosity	Flash Point	Notes
The VITROLIS range of cutting fluids are based on low odour hydrocarbons and designed to ensure excellent cleanliness during process. The products can be used for all types of flat glass including hard and soft coated glass, automotive and structural glass and can be selected to offer optimum performance based on type and thickness of material cut.	VITROLIS GB	Universal cutting oil.	1.15cst	62°C	Suitable for use on car windscreens and windows, laminated glass, float glass and mirrors up to 15mm thick.
	VITROLIS GB 24	Universal cutting oil.	1.35cst	68°C	Suitable for use on car windscreens and windows, laminated glass, float glass and mirrors up to 15mm thick.
	VITROLIS GB 35	Universal cutting oil.	1.7cst	62°C	Suitable for glass up to 19mm thick.
	VITROLIS GG	Universal evaporating glass cutting oil	0,95cst	41°C	Suitable for use on car windscreens and windows, laminated glass, float glass and mirrors up to 15mm thick.
	VITROLIS GM	Glass table cutting oil	none	>150°C	Manual & machine cutting of flat glass.

### SYNTHETIC DRILLING FLUIDS

Product Name	Description	Recommended Concentration (Drilling)	Concentration (Grinding)	Notes
VITROLIS DRO DG	Boron Free drilling and bevelling fluid.	4-6%	3-4%	Low foaming boron free soluble cutting fluid.
VITROLIS HF BF	Boron Free drilling and bevelling fluid.	3-5%	2-3%	Low foaming boron free soluble cutting fluid.
VITROLIS HF	Drilling and bevelling fluid	3-5%	2-3%	Low foaming, water soluble cooling lubricant for drilling and bevelling operations.

### SYNTHETIC EDGE GRINDING FLUIDS

Product Name	Description	Recommended Concentration	Notes
VITROLIS FS	Glass edge-grinding oil	1-6%	Higher concentration suitable for bevelling.

**50 OPERATING COMPANIES,  
33 PRODUCTION SITES,  
WORLDWIDE.**



FUCHS LUBRITECH is headquartered in Kaiserslautern, Germany, and employs more than 500 people worldwide. We are part of the FUCHS PETROLUB SE group, the world's largest independent supplier of high-performance specialty lubricants and form a unique specialty division within the group's structure. Locations in Germany, England, France, Australia, the USA, Brazil, Japan, China and India, as well as distributors and partners in more than 60 countries, guarantee the worldwide availability of FUCHS LUBRITECH products.