FUCHS Special Applications

VITROLIS

Lubricant & Digital Solutions for the Glass Industry

LUBRICANTS.
TECHNOLOGY.
PEOPLE.

FUCHS

MOVING YOUR WORLD

FUCHS LUBRICANTS

Facts and figures

Company: FUCHS LUBRICANTS (UK) plc, a company of the FUCHS Group based in Hanley, Stoke-on-Trent, England.
Product range: A full range of more than 3,000 products for all application areas
Certifications: ISO 9001: 2015, ISO 21469, Halal, Kosher. (detailed certifications at www.fuchs.com/uk)
Gate-to-Gate* CO_2-compensated

Since 1931, we have been pursuing the same goal: to keep the world moving. With innovative and technological lubricant solutions that have a sustainable impact on the future. Unconditional reliability is our top priority, it is the foundation of our company and basis for everything that defines us.

Reliability is both a driver and a demand. And it's a promise to all our customers in the fields of automotive suppliers and OEMs, mechanical engineering, metal processing, glass, mining & exploration, aerospace, energy, construction and transport, agriculture and forestry, as well as the paper, steel, metal, cement, forging and food industries, but also qualified lubricant dealers, car dealerships and workshops.

Long-term experience, high development strength and the fulfillment of far-reaching standards are the basis for the special quality of our world-leading product brands. We deliver solutions that are simply more efficient & therefore more sustainable. We always think in holistic solutions. For the development of individual solutions, we enter into an intensive customer dialog with you. This is the way we live up to our claim of moving your world.

The FUCHS 'Technical Centre of Excellence for Glass Industry Lubricants' is located within FUCHS UK's special applications division. The centre provides specialist technical support services to enhance that of the global FUCHS operations. The centre manages new product development and aids in the transfer of knowledge and technology to local FUCHS companies around the world.

Our skilled technicians develop products tailored specifically for the needs of many different glass sectors including, container, flat, pharma, cosmetic, optical, borosilicate, tableware, plus many more.

MOVING YOUR WORLD

*Gate-to-Gate Scope includes GHG-Protocal Scope 1, 2 and selected Scope 3 emissions (water, waste, business travel, commuting)

NOVAXION

Automatic swabbing solutions.

- **Blank side**
- **Blow side**
- **Efficient lubrication offering safety & time benefits**
- **Remote diagnosis and support**

Automatic swabbing has proven its overall efficiency within the glass forming process. This modern technology has progressively entered the market and is now recognised as standard equipment by glass plants, robot and IS machine OEM's.

The FUCHS swabbing lubricant is playing a key role in the success of the automated swabbing operation. Without the appropriate lubricant parameters, high risks of robot shut-downs and/or inefficient mould swabbing can rapidly take place.

Glass manufacturing process

Lubricant manufacture for the entire glass manufacturing process.

FUCHS is more than just glass speciality lubricants.
Our global network produce high performance gear oils, hydraulic fluids, turbine oils, industrial cleaners, plus much more.

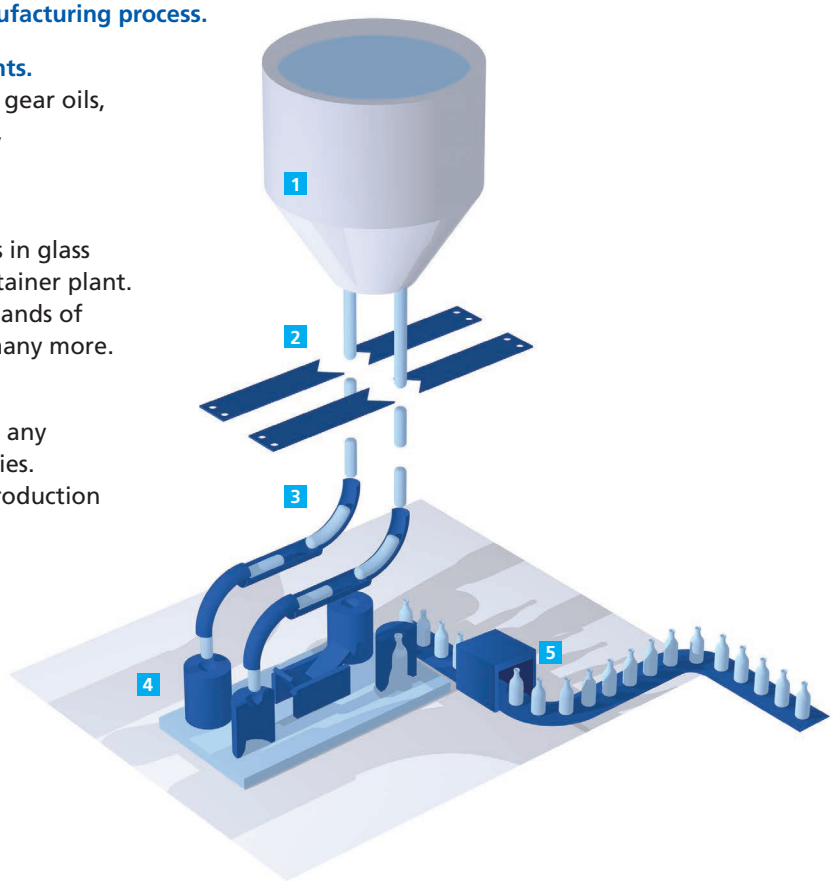
***VITROLIS* Special Application Lubricants.**
VITROLIS lubricants cover all special applications in glass from the feeder to the lehr entry point in a container plant. We also devlop products to meet the harsh demands of other glass sectors such as flat & pharma, plus many more.

***CASSIDA* Food Grade Lubricants.**
The most comprehensive range of lubricants for any application field in the food & beverage industries. All CASSIDA products are NSF registered with production sites certified as per ISO 21469.

***FUCHS* Smart Services**
The Complete Service Solution.
Our lubricants and service support options are geared towards building a valuable maintenance programme for your company.

FUCHS Service includes:

- Fluid Management
- Technical Support
- Reliability Support



1. I.S. Machine	Product Name	Description	Base Type	Notes
Machine & Feeder Lubrication **Recommendation:** ***VITROLIS IS X,*** Outstanding thermal and oxidation stability combined with ultra-low carbon forming tendencies. **Plunger Mechanism** **Recommendation:** ***VITROLIS PM 46*** A specially developed 46cst plunger mechanism lubricant, combining all of the benefits of the VITROLIS ISX grades with a reduced viscosity to ensure smoother operation of the mechanism.	VITROLIS IS X100 UV	ISO 100 synthetic ester based oil recommended for machine servo systems.	Synthetic Ester	Optional in extreme low temperature environments where standard ISO 220 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 ISO 220 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 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. Approved by Heye International.

2. Shear Mechanism	Product Name	Description	Dilution Ratio	Base Oil	Water Quality
Shear Spray Lubricants **Recommendation:** ***VITROLIS SHEARLUBE,*** Designed to extend shear blade life and provide excellent shear cut accuracy being biodegradable with excellent thermal and hard water tolerance.	VITROLIS SHEARLUBE 722X	Cost effective product for use with precise dosing systems.	< 1500 to 1	Synthetic, Vegetable	Soft water recommended.
	VITROLIS SHEARLUBE 3344	Suitable for all types of dosing systems.	< 1250 to 1	Semi-Synthetic	Soft water recommended but not required.
	VITROLIS SHEARLUBE B	Fully biodegradable mineral oil free shearspray lubricant.	< 1250 to 1	Synthetic	Hard or soft water.

3. Delivery Equipment	Product Name	Description	Base Type	Application
Delivery lubricants **Recommendation:** ***VITROLIS DL HEAVY / LIGHT*** Designed to reduce the coefficient of friction between the gob & the delivery equipment allowing faster and more consistent loading of the gob. **Delivery coatings** **Recommendation:** ***VITROLIS DC*** An epoxy resin graphite which is painted onto the delivery equipment to facilitate the loading of the gob into the blank.	VITROLIS DL LIGHT	Water white delivery oil. 36 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.
	VITROLIS DC	2 pack graphite dispersion in high temperature resistant epoxy resin.	Apply within 1 hour	To optimise dry at 80-120°C for 1-2 hours.

4. Mould Equipment	Product Name	Description	Graphite Content	Sulphur Content	Notes
Blank & Mould **Recommendation:** ***VITROLIS MM*** A premium range of swabbing compounds that provide excellent forming consistency, superior surface quality/ cleanliness, extended swabbing cycles and reduced build up in the forming equipment. They are suitable for all processes including BB, PB and NNPB. **Auto Swab Robots** **Recommendation:** ***VITROLIS SWABMATIC RANGE*** An OEM approved range of sprayable swabbing compounds giving significantly reduced application rates. Available in sulphur and zero sulphur versions.	VITROLIS MM PREMIUM	Universal grade suitable for beer, wine, spirit, pharmaceutical, cosmetic & perfume bottles.	3.5-6%	4-5.5%	Product can be used on BB, PB & NNPB operations on a range of coloured and flint glass ware with medium to heavy gob weights.
	VITROLIS MM PREMIUM LIGHT	Formulated for where cleanliness and surface glass clarity are important such as high quality wine and spirits containers, pharmaceutical, food and cosmetic jars.	2-3%	4-5.5%	Particularly suitable for production of thin wall/light weight containers by NNPB production methods. Also a great product for cleanliness in ring, mould & mould bottom swabbing.
	VITROLIS SWABMATIC RANGE	Designed for use in Autoswab Machines for IS Machine Blank Moulds.	1-3%	0-4.5%	• Zero reject rates • 1Kg = 1 million bottles • Increased production rate • Blank & neck ring • NNPB & Blow/Blow

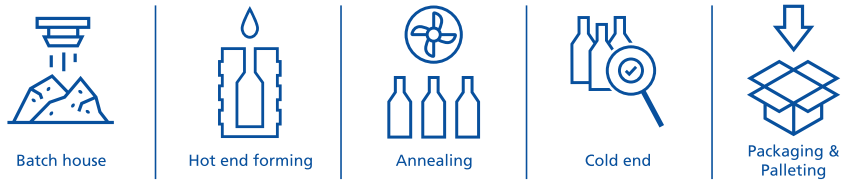
4. Pre-Coat	Product Name	Description	Application Rate	Notes
Pre-coats are often applied to blank & mould equipment to improve productivity following mould changes. VITROLIS SPC pre-coats dry immediately at room temperature and apply a lubricating film proven to provide excellent gob loading, parison release and to reduce or eliminate cracking/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.	Coating of 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.	Coating of 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.

4. Neck Ring	Product Name	Description	Solid Content	Notes
A specially formulated light to medium viscosity lubricant and release agent for use on the neck rings. It can be used on all processes and is particularly effective in reducing carry over of lubricant, therefore reducing the problem of 'dirty neck rings' on the formed container.	VITROLIS NRL 46	Lubricant and release agent for neck rings.	0.5%	Designed for NNPB process but can be used on BB and PB operations by applying a slightly lighter film.
	VITROLIS NECK RING E	Lubricant and release agent for neck rings.	1.5%	

4. Anti-checking Lubricants	Product Name	Description	Application Rate	Notes
VITROLIS anti checking lubricants 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 RELEASE AGENT V VITROLIS RELEASE AGENT X	Prevents occurrence of cracks or incisions in swabbing process.	Can be applied to blow moulds or bottom plates.	Apply undiluted with appropriate brush/ equipment.

5. Cold End Coating	Product Name	Description	Application Rate	Notes
VITROLIS Cold End Coating are designed to protect and lubricate bottles so that damage does not occur during transport, from high speed handling equipment or inspection prior to packing.	VITROLIS CEC 5/80	Sprayable coating for application directly onto containers as they exit the lehr.	Designed for use between 120-150°C. Product is applied in its neat form.	Product is manufactured from food safe ingredients in areas that comply with GMP Practices & are Kosher and Halal certified.
	VITROLIS CEC 2518	Non-ionic polyethylene wax emulsion	Designed for use between 100-150°C. A dilution ratio of 1:100 is usually recommended.	Product provides good scratch resistance and lubricity.

Our full FUCHS portfolio contains a wide variety of high-performance products to suit all applications.



Production Area	Product Name	Application
BATCH HOUSE	TITAN GEAR HYP SAE 90	Mixer Gearbox
BATCH HOUSE	RENOLIN B10 VG32	Mixer Hydraulic Gate Oil
BATCH HOUSE	RENOLIN CLP GEAR OIL 150	Cullet Crusher Oil / Batch Charger Gearbox
BATCH HOUSE	RENOLIN CLP GEAR OIL 460	Elevator / Conveyor Drive Gearboxes
HOT END	RENOLIN HI TEMP 460	Fan Bearings
HOT END	RENOLIT LX-EP 2	Lehr Re-Circ Fan Bearings
HOT END	MOLY RACE HT/URETHYN E/M2	Hot End Lehr Bearings
HOT END	RENOLIN CLP GEAR OIL 460	Lehr Gearboxes
HOT END	RENOLIT LX-EP 2	Mould Cooling / Dead Plate Fans / Lehr Plant Srews / Bearings
COLD END	CASSIDA GREASE EPS 2 / GTX 2	Cold End Lehr Bearings
COLD END	CASSIDA GREASE EPS 2 / EPS1	All Cullet Conveyor Bearings
COLD END	CASSIDA PTFE DRY SPRAY	Annealing Lehr Belt
COLD END	CASSIDA GREASE GTS 2	Lubrication Air Airculators and Exhaust Air Fans
COLD END	CASSIDA CHAIN OIL 150 / 320	Lubrication Chain at the End of the Lehr
COLD END	CASSIDA FLUID FL5 SPRAY	Cross-Draw of device / separation - Slat Band Chains
COLD END	CASSIDA FLUID FL5 SPRAY / PTFE DRY SPRAY	Cross-Draw of device / separation - Testing Machinery
COLD END	CASSIDA FLUID GL 220	Cross-Draw of device / separation - Gearboxes
COLD END	CASSIDA FLUID HF 68	Vertical Side Grip Conveyor - Chains
COLD END	CASSIDA FLUID WG 460	Vertical Side Grip Conveyor - Geared Motors
COLD END	CASSIDA GREASE GTS 2	Palletizer Bearings
COLD END	CASSIDA FLUID GL 220 / GL 460	Palletizer Gearboxes
COLD END	CASSIDA CHAIN OIL 150	Palletizer Chains
COLD END	CASSIDA FLUID FL5 SPRAY	Palletizer Transport Conveyor Guids
MAINTENANCE	FUCHS BRAKE CLEANER	Cleaner

Pharmaceutical & Flat Glass

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. 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 SWABPHARMA-I	Innovative swabbing compound specific to the manufacture of Pharmaceutical ware.			Displaying extremely low levels of residue build up. VDV SWABPHARMA has been tested and approved on Borosilicate Glass type 1.

FLAT GLASS - FLOAT & AUTOMOTIVE

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 (25°C)	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 (25°C)	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 (20°C)	62°C	Suitable for glass up to 19mm thick.
	VITROLIS GG	Universal evaporating glass cutting oil.	0,95cst (40°C)	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.	9cst (40°C)	>150°C	Manual and machine cutting of flat glass.

Synthetic Drilling Fluids	Product Name	Description	Recommended Concentration (Drilling)	(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.

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

FUCHS LUBRICANTS

Visit our website

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.

Contact:

Global Headquarters
FUCHS LUBRICANTS GERMANY GmbH
Friesenheimer Straße 19
68169 Mannheim/Germany
Phone +49 621 3701-0
Fax +49 621 3701-7000
E-mail zentrale-flg@fuchs.com
www.fuchs.com/de/en

FUCHS LUBRICANTS (UK) plc,
New Century Street, Hanley,
Stoke-on-Trent, ST1 5HU, England
Tel.: +44 (0) 1782 203700
contact-uk@fuchs.com
www.fuchs.com/uk
/fuchslubricantsuk
@fuchslube_uk
/fuchs-lubricants-uk-plc

The information contained in this product information is based on the experience and expertise of FUCHS LUBRICANTS (UK) plc in the development and manufacturing of lubricants, and represents the current cutting edge. The performance of our products can be influenced by a series of factors, especially the specific use, the method of application, the operational environment, component pretreatment, possible external contamination, etc. For this reason, universally valid statements about the function of our products are not possible. Our products must not be used in aircraft/spacecraft or their components, unless such products are removed before the components are assembled into the aircraft/spacecraft. The information given in this product information represents general, non-binding guidelines. No warranty expressed or implied is given concerning the properties of the product or its suitability for any given application. We therefore recommend that you consult a FUCHS LUBRICANTS (UK) plc application engineer to discuss application conditions and the performance criteria of the products before the product is used. It is the responsibility of the user to test the functional suitability of the product and to use it with the corresponding care. Our products undergo continuous improvement. We therefore retain the right to change our product range, the products and their manufacturing processes as well as all details of our product information sheets at any time and without warning, unless otherwise provided in customer-specific agreements. With the publication of this product information, all previous editions cease to be valid. Any form of reproduction requires express prior written permission from FUCHS LUBRICANTS (UK) plc. All information correct at time of publication.

© FUCHS LUBRICANTS (UK) plc. All rights reserved.

1026