



**CONDAT**



## **LUBRICANTS FOR GLASS INDUSTRY**



COMMITTED TO RESPONSIBLE PERFORMANCE

# UNIQUE KNOW-HOW

Since 1854, CONDAT formulates and produces a wide range of lubricants, metal-forming products, coatings and special products for the world of industry. Based on 165 years experience, CONDAT has focused on designing products with high added technical value for numerous applications and

earned worldwide recognition in leading high-tech markets: tunneling, wire drawing, aeronautic, industrial maintenance... Its international presence allows a privileged proximity with its customers, nurturing an approach based on permanent innovation and product development.

## MORE THAN 165 YEARS EXPERTISE

**192 M€**  
turnover



**688**  
employees  
worldwide



**30**  
technologies  
mastered



**74**  
agents and  
distributors



**4**  
production  
sites ISO 9001  
certified



**42**  
markets  
application  
fields



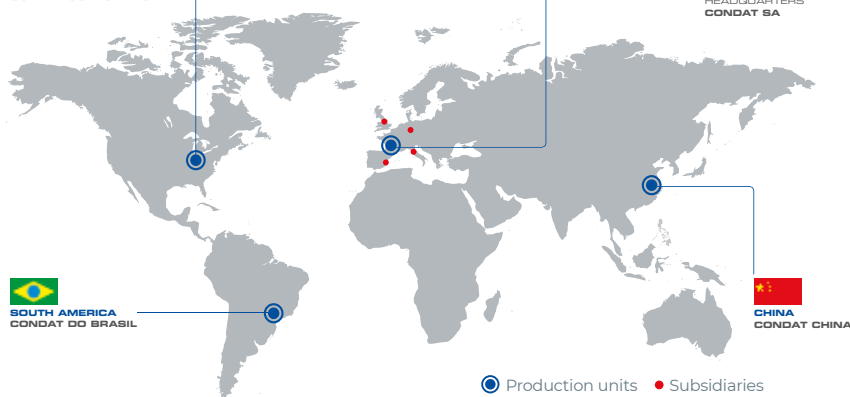
**2 000**  
products

  
NORTH AND  
CENTRAL AMERICA  
CONDAT CORPORATION

  
FRANCE  
HEADQUARTERS  
CONDAT SA

  
SOUTH AMERICA  
CONDAT DO BRASIL

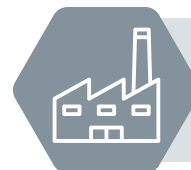
  
CHINA  
CONDAT CHINA



**Innovation**  
**15%**  
turnover achieved  
with products less  
than 3 years old



**Sustainable  
strategy**  
**30%**  
of low carbon  
raw materials



**100%**  
independent  
company

# CORPORATE SOCIAL RESPONSIBILITY



Aware of environmental issues ahead of its time, for more than 20 years CONDAT has been committed to developing solutions that are more respectful of individuals and the planet.

Our Corporate Social Responsibility aims to respect the environment and have a positive impact on society by remaining economically viable. This requires building an offer that reduces the impact of our activities on the environment, by limiting air, water and

noise pollution, resource consumption and continuously improving our CO<sub>2</sub> footprint. Our priority is also to provide the best working conditions for employees, guaranteeing their security, life quality and equity. CONDAT CSR policy is certified by ECOVADIS since 2018.

Our CSR engagements and politics embody CONDAT's values, in particular "Build to Last", a key historical value of the group. This program is part of a continuous improvement process with our partners and clients.

# PRESERVE THE 4 ELEMENTS

Our responsibility is to preserve People, Nature and its 4 elements, Water, Fire, Earth and Air, by **reducing the impact and risks of our activities and also your activities** on the ecosystem.

Each of our markets naturally associates with 1 of the 4 elements to reflect our commitments to society.

For all these applications, we are looking for the most efficient lubricating solution. Our ambition is not only to guarantee you a high level of performance, it is also to provide you support towards a **responsible performance** that takes into account **social, safety and environmental issues**.



**Water**

for metal working



**Fire**

for steel, forging, glass and quenching



**Earth**

for maintenance and tunneling



**Air**

for wire drawing



Our ambitions are high-reaching and we can count on our main strength: **our multi-specialist DNA**.

Our teams are energized to meet the major challenges of the future, your challenges and those of our environment. **Innovation is the only solution and we're making it our 5<sup>th</sup> element!**

## COMMITTED TO RESPONSIBLE PERFORMANCE FOR GLASS INDUSTRY



Closely related to energy but also risk, fire is naturally associated with the glass industry for which materials are processed at very high temperatures and under severe constraints.

To meet your challenges, CONDAT's is determined to secure your operating conditions with high performance lubricants that reduce your overall costs but also show a sustainable profile.

To achieve this, we provide solutions towards **responsible performance** that allow you to increase your productivity, reduce your consumption, and respect people and the environment.



Follow the sand fox advice symbolized by the fire drop pictogram to discover our Responsible Performance offer.

# GLASS APPLICATIONS

## CONTAINER Glass



Glass is made of natural materials, it can be shaped in different ways, and is inert. It is the perfect solution for storage. Food, drinks, cosmetics, pharmaceuticals, chemistry compounds are different industries trusting glass. Jars, bottles, vials and tableware glass with different size and shapes are the results of human imagination and respond to all the needs like goods transportation, food safety and quality over time.

## FLAT Glass



The Flat Glass industry is a strong pillar of the glass industry. Applications include the construction industry, appliances with windows, floors, facades, and skylights to name a few. These glass products offer light, comfort, wellbeing, security and energy efficiency thanks to a sustainable material. The ability to control heat, sound and light transmission enables the creation of several new products.

The transportation industry is the second main flat glass application. Windshields, backlites, sunroofs, side screens, cabin windows are examples of solutions provided to offer safety and security to drivers and passengers. Solar energy and electronics represent the third part of this industry. Solar panels, mirrors and electronic displays also need transparency, anti-reflective and resistance properties.

## OPTICAL Glass



Optical Glass is a specific material developed for optical and ophthalmic systems like lenses, mirrors and prism. Researched properties are different from flat and containers glass. Refraction index, dispersion, light transmittance, thermal expansion are optical and mechanical characteristics people are looking for. Materials can be organic or inorganic and specific additives provide the desired chemical and physical properties. Quality is the main driver in this industry and glass purity is critical when used in precision scientific tools.

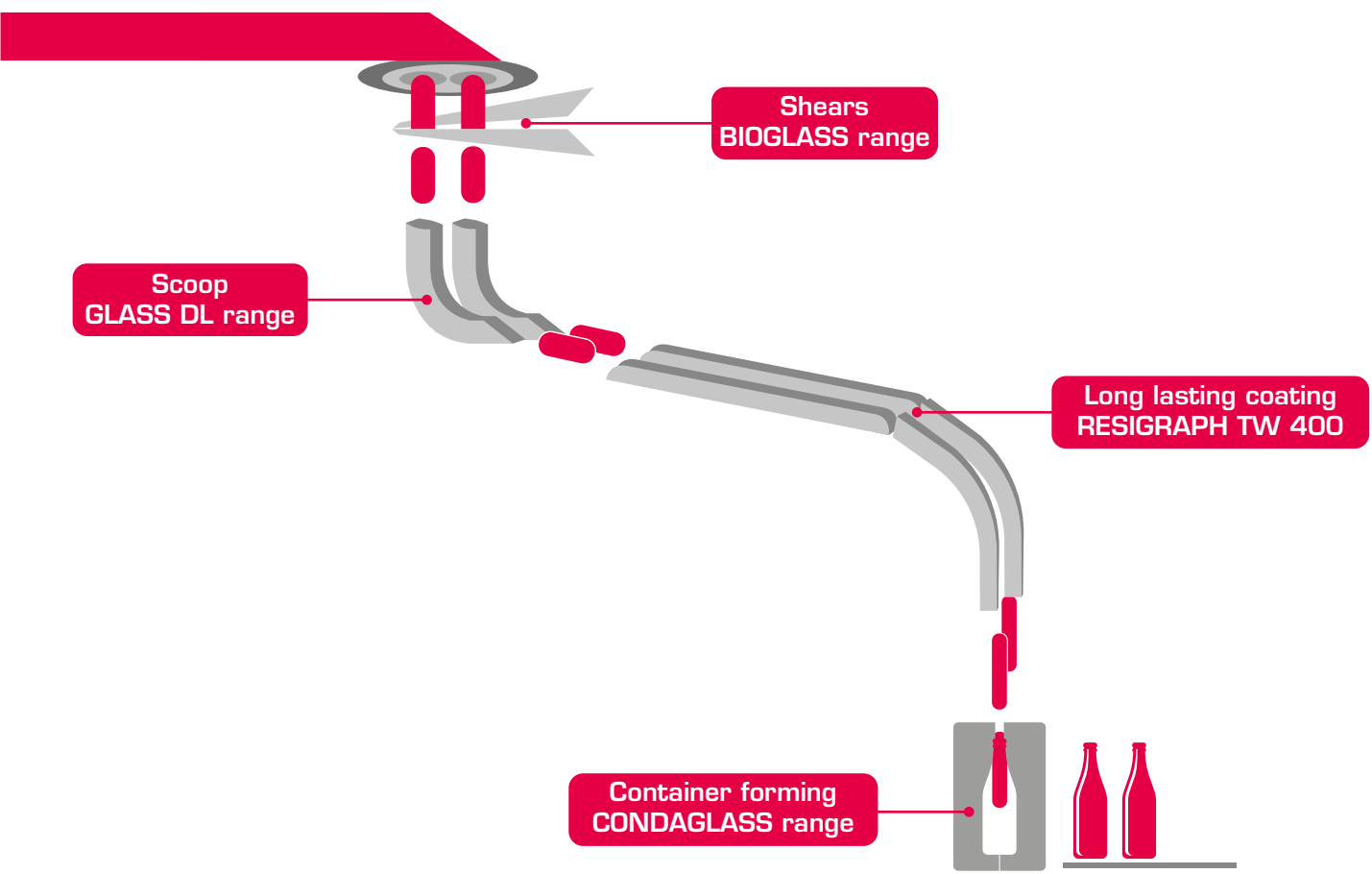
## ART Glass



Art Glass corresponds to handcrafted artistic glass objects. Crystal glasses and vases, jewelries and art pieces are made of specific glass which can respond to the artist imagination. Creativity and technicity lead to the manufacturing of tailor-made articles that sometime take several months to be obtained. Some of these pieces of art will then be found in the luxury area like hotels, yachts and sometimes museums.



# CONTAINER Glass



Shears  
BIOGLASS range

Scoop  
GLASS DL range

Long lasting coating  
RESIGRAPH TW 400

Container forming  
CONDAGLASS range

## SHEARS PERFORMANCE



### BIOGLASS RANGE

Blades or shears cutting glass gobs must be constantly lubricated. This specific lubricant has four functions: cool down the blades, avoid wear, corrosion and molten glass adhesion. A clear cut will avoid cutting lines and reduce bottle rejects at the end of the process. Water characteristics are also important parameters to control before using a shear lubricant. CONDAT offers BIOGLASS, a complete range of aqueous fluids to meet your needs.

|                           | Chemistry                           | Working concentration (ppm) | Lubrication performance | Recycling | Without Biocide |
|---------------------------|-------------------------------------|-----------------------------|-------------------------|-----------|-----------------|
| <b>BIOGLASS 08</b>        | Solution – Synthetic oil            | 0.1-0.4%                    | ++                      | ✓         |                 |
| <b>BIOGLASS TW 100</b>    | Solution – Vegetable oil            | 0.1-0.5%                    | +++                     |           | ✓               |
| <b>BIOGLASS DLS 450 F</b> | Emulsion – Synthetic & Mineral oils | 0.1-0.3%                    | +++                     |           |                 |
| <b>BIOGLASS DLS 67 F</b>  | Emulsion – Synthetic oil            | 0.1-0.3%                    | +++                     | ✓         |                 |



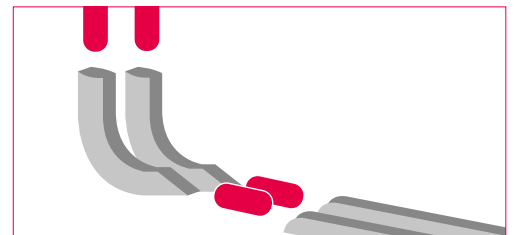
### BIOGLASS TW 100

Each solution contained in the BIOGLASS range offers varied performances depending on the challenges manufacturers encounter. In this category, BIOGLASS TW 100 is one of the best sellers as it shows several competitive advantages. It's a lubricant made of a bio sourced based oil. This product uses renewable raw materials and eliminates biocides from its formulation. Its Health, Safety, and Environmental impact is therefore limited. This solution is also economical. It is the best value for money thanks to an excellent ratio between price and lubrication performances.

## SCOOP EFFICIENCY

### GLASS DL RANGE

Once formed, gobs must be distributed to each section of the IS machine. Distribution must be as quick as possible to maintain the high temperature of glass and hence its plasticity. It must also be regular and constant at the entry to the blank mold to maintain optimal productivity and clean equipment. GLASS DL range ensures these functions for all elements of the feed system by lubricating the scoops, troughs and deflectors.

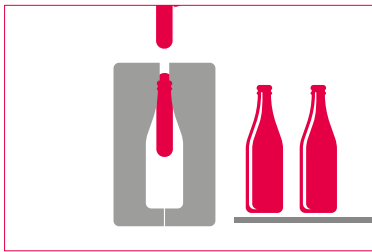


|                      | Chemistry     | Viscosity [cSt] at 40°C | Lubrication performance | Scoop cleanliness | Flash point |
|----------------------|---------------|-------------------------|-------------------------|-------------------|-------------|
| <b>GLASS DL 20 N</b> | Mineral oil   | [28-34]                 | +                       | ++                | > 200°C     |
| <b>GLASS DL 68</b>   | Mineral oil   | [55-69]                 | ++                      | +++               | 260°C       |
| <b>GLASS DL 125</b>  | Synthetic oil | [116-132]               | +++                     | +++               | 220°C       |

### LONG LASTING COATING RESIGRAPH

How to improve performance by avoiding gob defects and reaching perfect loading? RESIGRAPH is a dual-component kit for treatment of the inner troughs and deflectors. The dry coating formed is made of graphite and an epoxy resin which ensures a uniform gob speed through the delivery system and hence a regular transfer time between shear and blank mold. It will last at least 30 days and help to reduce rejects due to load defects.

## MOLD RELEASE



### CONDAGLASS RANGE - SWABBING LUBRICANTS for blank molds

Swabbing greases are critical lubricant solutions applied on mold surfaces for productivity optimisation. Depending on the quality standards requested by the customer, the bottle's shape, the application method and the production speed, CONDAT offers several solutions through its CONDAGLASS range. Ensuring consistent performance is the main objective for CONDAGLASS blank mold swabbing products. CONDAT Solutions are designed for manual application or robot spraying unit.

|                | Application method | Gob weight | Bottle cleanliness | Viscosity |
|----------------|--------------------|------------|--------------------|-----------|
| CONDAGLASS 397 | Manual             | +          | +++                | ++        |
| CONDAGLASS 394 | Manual             | ++         | ++                 | +++       |
| CONDAGLASS 370 | Manual             | ++++       | +++                | +++       |
| CONDAGLASS 365 | Automatic          | +          | ++++               | +         |
| CONDAGLASS 364 | Automatic          | +++        | +++                | +         |



### CONDAGLASS 370

Newly developed from CONDAT R&D labs, the CONDAGLASS 370 is a graphite swabbing lubricant. Its new formula allows easy lubrication of all kind of bottle shapes, including spirit bottles (heavy gobs) and cosmetic containers (requiring high cleanliness). Developed to reduce or eliminate the automatic reject after swabbing, CONDAGLASS 370 can save 2 to 3 bottles every 30min, meaning millions of bottles can be recovered every year! High-performance, CONDAGLASS 370 also generates low quantity of residue resulting in cleaner molds that can last longer.



Cleaner bottles



Less rejection after swabbing



Millions of bottles saved

### CONDAGLASS RANGE - SWABBING LUBRICANTS for neck ring molds

Needs of lubrication in neck ring molds are very different than in blank molds. It is not a matter of friction, it is definitely a very high concern of accuracy and quality of the design in this part of the bottles. This is especially a must for beverage filled in with pressure. CONDAGLASS

technologies were developed to leave a very thin and uniform film of graphite over the mold to reach that goal. Thanks to their graphite quality, purity and specific additive, CONDAT solutions avoid also marks and traces on bottle necks and improve mold release.

|                   | Mold material     | Application method | Bottle cleanliness | Viscosity |
|-------------------|-------------------|--------------------|--------------------|-----------|
| CONDAGLASS 367 SF | Cast-iron & Brass | Manual             | ++++               | +         |
| CONDAGLASS 397    | Cast-iron         | Manual             | +++                | ++        |



### CONDAGLASS 367 SF



For many years, sulfur has been a main component in swabbing neck ring molds as it is essential to fix the graphite present in swabbing greases. However, sulfur has several disadvantages when high quality glass parts production is requested with bronze molds. Sulfur can stain the bottles and alter the molds, thus require removing them more frequently with fast wear issues that limit their lifetime.


CONDAGLASS 367 SF is designed for the glass producers which want to improve their level of quality and create articles with high added value.

Thanks to CONDAGLASS 367 SF, swabbing frequency is cut in 1/2 and bronze mold life is doubled.

## CONDAGLASS RANGE - SWABBING LUBRICANTS for blow molds

CONDAT lubricants give brightness to the most demanding items. Wetting agents and additives chosen allow easy penetration of even narrow surfaces and help mold releasing for the most delicate shapes.

The main properties required for swabbing lubricants in this stage are to avoid marks on glass bottles and provide clear and clean engravings. We have dedicated swabbing mold compounds for blow molds.

|   | Application method | Shape complexity | Bottle cleanliness |
|---|--------------------|------------------|--------------------|
| CONDAGLASS 398  | Manual             | ++++             | ++                 |
|  CONDAGLASS 400 | Manual             | +++              | +++                |




### CONDAGLASS 400

CONDAGLASS 400 is our first swabbing grease without graphite. This white coating will allow no graphite transfer, more cleanliness and as a result fewer bottle rejects. Its high lubricating performance match the most difficult releasing requirements. Discover CONDAGLASS 400 and increase your productivity.



## IS MACHINE & MAINTENANCE SOLUTIONS

To offer you solutions for all your technical lubrication needs, CONDAT has developed a range of maintenance lubricants dedicated to IS machines.

|   | Function                       | Chemistry             | Properties  |
|---|--------------------------------|-----------------------|---|
|  GLASS HTS 250 IS | Maintenance oil for IS machine | Synthetic oil         | Resistant to high temperatures  |
| CONDAGLASS START  | Mold start-up coating          | Graphite spray        | Thin film resistant to high temperatures  |
| CONDAGLASS S24  | Conveyor lubricant             | Water based lubricant | Leave a flat conveyor avoiding adding stress to the bottles. No dirtiness on bottles bottom |



### GLASS HTS 250 IS

New GLASS HTS 250 IS is a 100% SYNTHETIC OIL dedicated to Central Lubrication of the I.S. Machine with high flash point. Already approved by both glass plants and I.S. machine OEM's, this lubricant has performed with the following unique benefits. All these benefits result in a lubricant consumption reduced up to 50% compared to a standard mineral oil. Completely free of heavy metals, chlorine and solvents, GLASS HTS 250 IS also reduces fire risks.



- Low evaporation
- High thermal stability
- Low oxidation
- Excellent lubricating properties

This product is available with a fluorescent dye that reflects easily under a UV light, allowing preventive maintenance to detect very quickly machine leaks.




# DEDICATED LUBRICANTS FOR TABLEWARE AND PHARMACEUTICALS

## TABLEWARE - Ring, plunger and plate conveyor lubricants

Tableware manufacturing processes require dedicated lubricants for precise technical constraints. That's why CONDAT developed, through partnerships with industrial leaders, a complete dedicated range to answer these needs. The main objective of our lubricants tableware range is to bring the right amount of carbon residue on mold and plunger surfaces for perfect article releasing without any defect.



|   | Use            | Characteristics                                  |
|---|----------------|--|
| GLASS TW 3  | Ring & Plunger | Low viscosity neat oil<br>Graphite free solution |
|  GLASS TW 22 | Ring & Plunger | Neat oil<br>Graphite free solution               |
| CONDAGLASS TW 150   | Ring & Plunger | Graphite swabbing oil                            |
| CONDAGLASS TW 180   | Plate conveyor | Graphite free                                    |



### GLASS TW 22

GLASS TW 22 is a white mineral oil suitable for all industrial spraying systems. Refined to leave the right amount of residue inside the molds, GLASS TW 22 was designed with operators in mind to use the safest product.

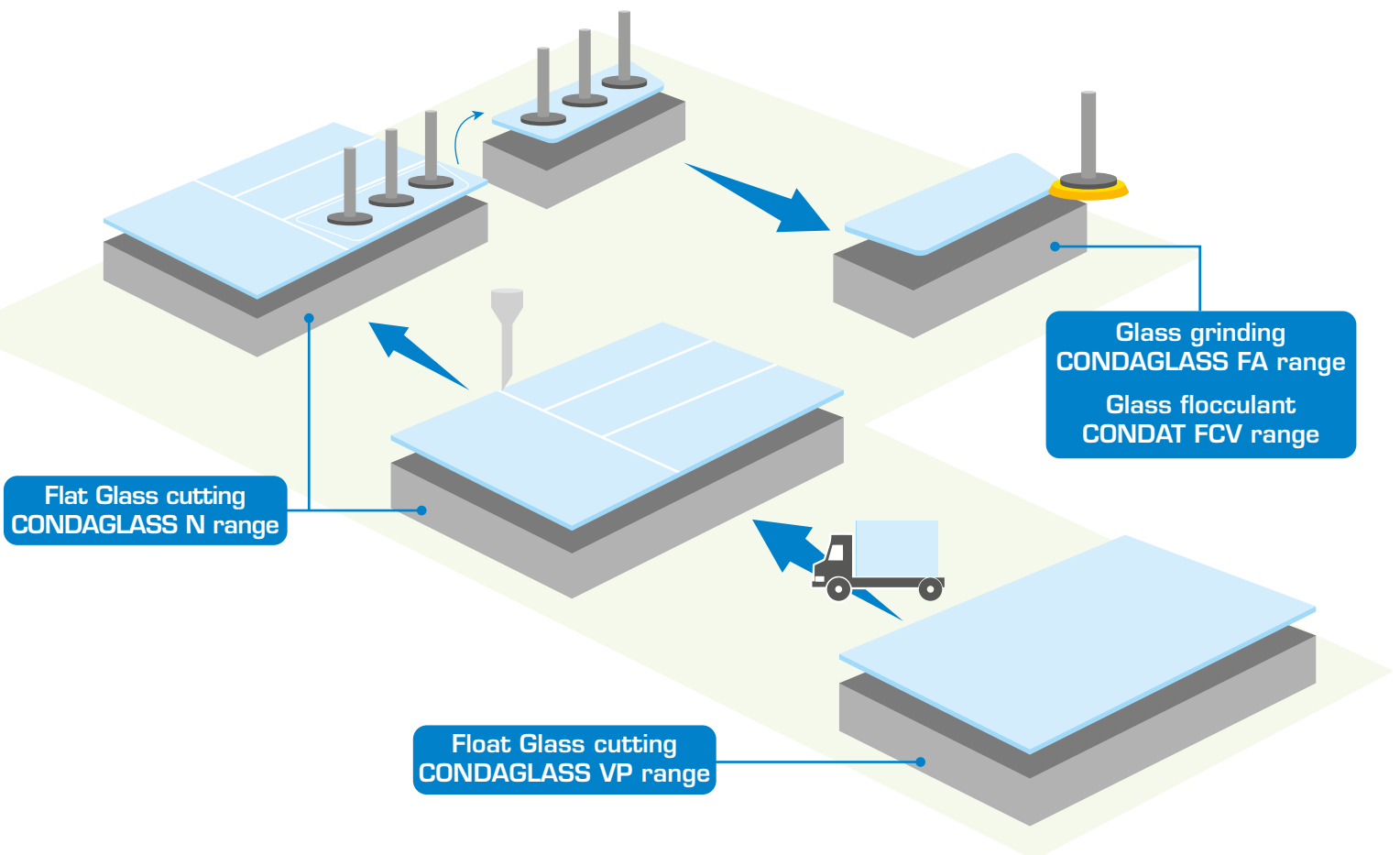


## PHARMACEUTICAL - Neck ring lubrication

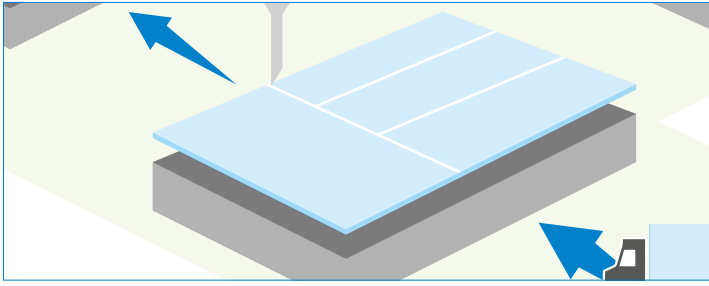
CONDAGLASS VIAL was developed by CONDAT for this specific process. Its properties offer a perfect lubrication tool for use on the neck ring portion of vial molds. CONDAGLASS VIAL is a high viscosity white mineral-based oil, certified for food contact (H1). No residue on the tools nor smoke is generated. Vials and ampoules obtained are cleaned without any defects. CONDAGLASS VIAL enhances your productivity.



## FLAT Glass



## GLASS CUTTING



### CONDAGLASS VP & CONDAGLASS N RANGES

CONDAGLASS VP & N lubricants are dedicated to two different production steps within the flat glass industry, float glass cutting and flat glass sizing. Final objectives are similar, avoid crack diffusion between priming and breaking, and leave a bright surface. CONDAGLASS developed a wide range of solutions for these specific applications classified in two categories, the CONDAGLASS VP and N ranges. Depending on the glass thickness and equipment use different lubricant solutions can be suggested.

### FLOAT GLASS CUTTING

|                   | Glass thickness   | Flash point | Chemistry | Vanishing speed | Glass cleanliness |
|-------------------|-------------------|-------------|-----------|-----------------|-------------------|
| CONDAGLASS VP 500 | From 0.4 to 2 mm  | >60°C       | Solvent   | High            | ✓                 |
| CONDAGLASS VP 600 | From 0.4 to 10 mm | >62°C       | Solvent   | Medium          | ✓                 |
| CONDAGLASS VP 800 | From 8 to 15 mm   | >75°C       | Solvent   | Low             | ✓                 |

### FLAT GLASS CUTTING

|                   | Vanishing speed | Chemistry     | Viscosity (cSt) at 40°C | Compatibility with coated glass | Glass surface cleaning treatment |
|-------------------|-----------------|---------------|-------------------------|---------------------------------|----------------------------------|
| CONDAGLASS N 28   | Low             | Oil + Solvent | [7-10]                  | ✓                               | alkaline cleaners and solvents   |
| CONDAGLASS N 60   | Low             | Emulsion      | [50-70]                 | ✓                               | water                            |
| CONDAGLASS VP 500 | High            | Solvent       | 1,3 cSt                 | ✓                               | alkaline cleaners                |
| CONDAGLASS VP 600 | Medium          | Solvent       | 1,6 cSt                 | ✓                               |                                  |



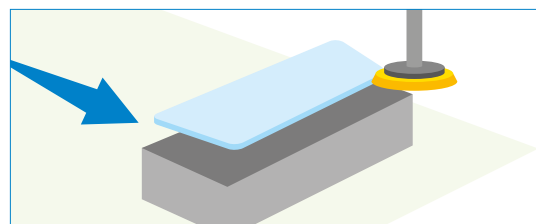
### CONDAGLASS N 60


CONDAGLASS N 60 chemistry offers to this product the ability to be easily **cleaned-up at room temperature and without high water pressure**. Thanks to CONDAGLASS N 60 formula, neither alkaline cleaners nor solvents have to be used to wash glass plates. Enhance your productivity, improve the safety of your operations and decrease your impact on the environment thanks to CONDAGLASS N 60.

## GLASS GRINDING & DRILLING

### CONDAGLASS FA RANGE

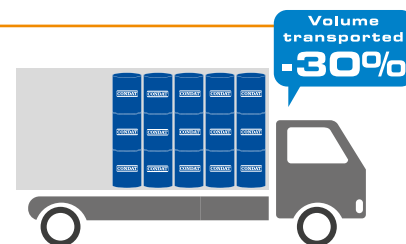
CONDAT offers a large range of solutions developed to respond to the technical, environmental and safety issues of the flat glass processing stages. Grinders and drillers are sensitive tools working at high speed. Our CONDAGLASS FA range protects those equipment against wear and overheating and also ensure a clean and clear glass after processing. Water characteristics and processing speed will be the main parameters to control for product selection.



|                   | Processing speed / Thickness ratio | Working concentration (%) | Anti-rust properties | Boron free | Anti-foaming property              | Combining CONDAT equipment  |
|-------------------|------------------------------------|---------------------------|----------------------|------------|------------------------------------|---|
| CONDAGLASS FA 255 | Medium                             | [2 - 5]                   | ++                   |            | Very good with soft and hard water |  <p><b>DOSATRON</b><br/>[1 - 5%]<br/>concentration</p> <p><i>Dositron:</i><br/>dosing system</p> |
| CONDAGLASS FA 260 | High                               | [1.5 - 3]                 | +++                  |            | Very good with soft and hard water |   |
| CONDAGLASS FA 263 | Very high                          | [1.5 - 3]                 | +++                  |            | Good with soft and hard water      |   |
| CONDAGLASS FA 560 | High                               | [2 - 5]                   | +                    | ✓          | Good with soft and hard water      |   |

### CONDAGLASS FA 260

As an active player of sustainable development, CONDAT works for over 20 years on reducing the impact of its lubricant solutions on workers' health and the Environment. Offering more concentrated and efficient solutions is also part of our DNA. With CONDAGLASS FA 260 choice, it's a potential coolant consumption decrease by 30%. **Less consumption, less transportation, better for earth.**



## GLASS PARTICLES FLOCCULATION



### CONDAT FCV RANGE

To enhance productivity and decrease coolant consumption, flocculants and coagulants are crucial solutions for higher performances. Depending on the grinded glass particles size, the amount of particles grinded and customers equipment, different solutions can be provided. A preliminary analysis on waste water is requested to define which product to use and precise the amount of flocculant or coagulant to add.

|            | Chemistry  | Material state  | Viscosity (cPs) | Working concentration (ppm) | Shelf life | Particle size | Dosing                         |
|------------|------------|-----------------|-----------------|-----------------------------|------------|---------------|--------------------------------|
| FCV 5271 C | Coagulant  | Liquid          | [200-400]       | [5-500] ppm                 | 6 months   | Very small    | Easy to adjust<br>Concentrated |
| FCV 0564 P | Flocculant | Solid           | -               | [0.1-10] ppm                | 48 months  | Big particles | High efficiency                |
| FCV 0510 P | Flocculant | Granular powder | -               | [50-500] ppm                | 24 months  | Big particles | Easy to adjust<br>Efficient    |



**OPTICAL AND ART  
Glass**



## OPTICAL GLASS SURFACING, GRINDING AND POLISHING



### CONDAOPTIC RANGE

CONDAT offers a range of coolants, CONDAOPTIC, for the optical and ophthalmic glass industries. Coolants are concentrated lubricants to be diluted in water, to improve the process of surfacing glass. They avoid over-heating tools, reduce maintenance and replacement. They also help to eliminate solid particles from equipment, reducing grinders clogging.

|                  | Application                          |
|------------------|--------------------------------------|
| CONDAOPTIC 300   | Optical glass surfacing and grinding |
| CONDAOPTIC 400   | Optical glass surfacing and grinding |
| CONDAOPTIC P 500 | Optical glass polishing              |

## ART GLASS

CONDAT acquired RENITE, US Glass Lubricant specialist, in late 2017. This famous company was involved a lot in Art Glass with huge experience on that high demanding processes. CONDAT continues RENITE specific know-how in Art Glass

|                   | Function         | Chemistry          | Properties                                    |
|-------------------|------------------|--------------------|---|
| CONDAGLASS MPR    | Mold releasing   | Graphite paste     | High releasing properties<br>High cleanliness |
| CONDAGLASS FA 560 | Crystal grinding | Boron free coolant | High quality surface finishing                |





## EQUIPMENT

### REDUCE BIOCIDES, ENHANCE PERFORMANCES

#### MICRODOSE UNIT

To maximize the performance of its BIOGLASS TW 100, CONDAT suggests glass manufacturers to use the right dosing equipment. MICRODOSE is a special unit suited for the glass industry and the dosing of very low concentrations. Using volumetric dosing, it creates the solution in real time without accumulation, thereby preventing the development of bacteria and fungi and the deterioration of the blend. Thanks to this characteristic, it is ideal for achieving and maintaining HACCP standards on several production lines.

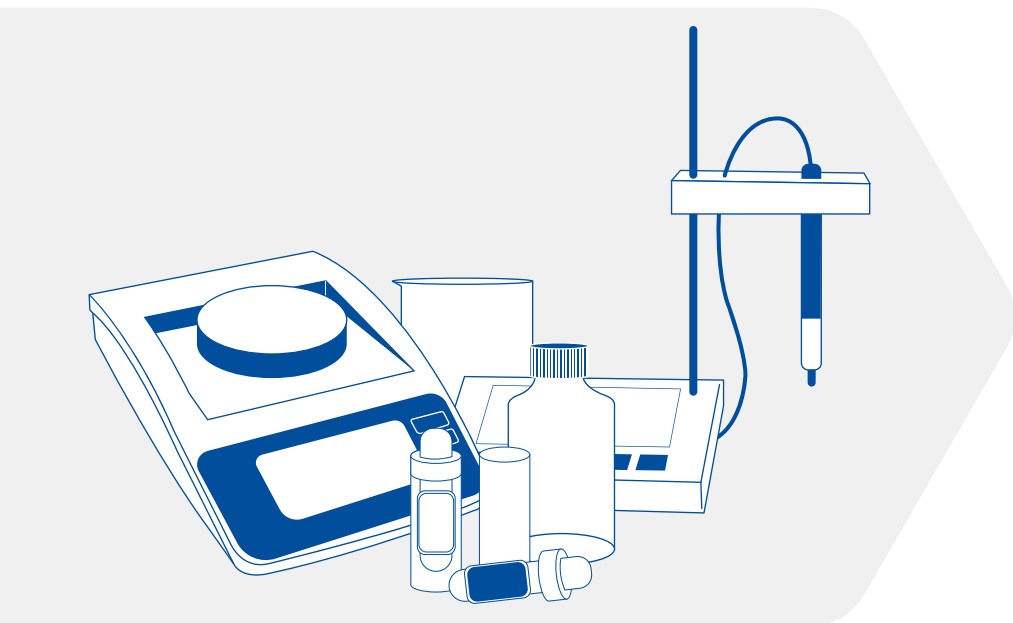


#### BENEFITS:

- Enable customize your lubrication on each production line
- Small size allowing close installation to shear spray
- Designed to withstand harsh environments (up to 80 ° C operating temperatures, smoke, oil splash) thanks to its cooling system and waterproof case
- Improve the performance of lubrication products: the dilution is carried out at the last moment so there is no risk of deterioration of the product (bacteria)
- Limit harmful consumables: as the dilution is made closer to the shear spray, it avoids to add biocides
- Limit costs: the lubricant consumption is overall decreased by 2 and it stops biocide consumption



# ANALYTICAL SERVICES



## WATER CONTROL

Characteristics checking

- Hardness
- Bacteria / Fongus
- pH
- Conductivity

## ANALYSES DURING SERVICE

For continuous bath control

- Bacteria / Fongus
- Concentration dilution ratio
- Corrosion

## SPECIFIC ANALYSIS

Flocculation improvement

# CONDAT

COMMITTED TO RESPONSIBLE PERFORMANCE

