



Coatings for an energy efficient world

# > Xylan®

## DESIRABLE DRY FILM LUBRICANTS

**Xylan®**, based upon the Whitford Xylan® family of coatings, are first and foremost dry film lubricants (DFL); however, they have many desirable secondary properties. These lubricants are combined in a matrix with the newest high-temperature organic polymers resulting in “polymeric alloys” formulated to provide unique and desirable properties.

The films can operate under heavy loads, at high temperatures, in chemical and corrosive environments, and combinations thereof. In the industrial world, they are known as “extreme performance coatings.”

These renowned coatings differ from traditional fluoropolymer coatings in one very important aspect - they are composite materials. Lubricants with the lowest known coefficient of friction are combined in a matrix with the newest high-temperature organic polymers.

## BENEFITS OF XYLAN®

- > Low friction (as low as 0.02)
- > Wear-resistance, even under extreme pressures
- > Corrosion and chemical resistance in most environments
- > Weather-resistant against sunlight, salt water and road chemicals
- > Wide temperature operating range: from -420° to +550°F (-250° to 285°C)
- > Flexible curing schedule: ambient to 750°F (400°C)
- > Wide colour range
- > Good pliability
- > Machinable
- > Excellent adhesion properties

## > APPLICATIONS

### BEARINGS

**Xylan®** anti-galling properties make it ideal for bearing type surfaces. The family of coatings exhibit excellent wear resistance and low friction that improve the life of bearings and wear surfaces. By reducing metal-to-metal contact at interface surfaces, the coatings minimise the points of adhesive wear and heat build-up. Applications include:

- Flat sliding surfaces, e.g. actuators
- Journal bearings, e.g. on rod bearings
- Rolling element bearings, e.g. shafts

### FASTENERS

An environmentally safe coating for fasteners matching the benefits provided by electroplated options providing significant benefits such as:

- Controlled torque
- Easy fastener removal
- Colour coding
- Resistance to galvanic corrosion
- Elimination of toxic lubrication
- Wide temperature range
- Easy application
- Toughness
- Adhesion

### PROCESS COMPONENTS

Resistance to attack from caustic and acidic chemicals make it an ideal choice for components in the process and chemical industries. Xylan® reduces the tendency for galvanic corrosion. This is due, in part, to its high dielectric strength > 1000 volts/mm (which inhibits galvanic corrosion).



## EXTREME PERFORMANCE DRY FILM LUBRICANTS

**Xylan®** based coatings have long been the benchmark of industrial coatings. They can be used for a variety of applications including consumer, industrial, automotive, flexible finishes, dip/spin, offshore/ oil industry, bearings, moulds, garden tools, water/wastewater industry, reprobographics, commercial bakeware, textiles and more.

<b>Xylan®</b>	<b>Film Properties</b>
Tensile Strength (ASTM D1708)	300-350 bar
Elongation (ASTM D4894)	50%
Hardness (ASTM D 2240)	60-90HB (Shore D)
(Impact Strength (ASTM D256)	17-20Nm
Abrasion Test (Tabor)	>15mg
Coefficient of Friction (ASTMD1894)	0.15-0.35 static (0.02 Dynamic)
Dielectric Strength (ASTM D149)	1400 V/mm
Operational Temperature	-70°C -260°
Melting Point	~ 350°C
Chemical Resistance (ASTM D543)	Very good (grade dependant)
Salt Spray Resistance (ASTM B117)	Excellent (grade dependant)
Water Absorption (ASTM D570)	<0.03%
Thickness	20-50µm



### Wallwork Cambridge: Coatings for an energy efficient world

Wallwork Cambridge, provides an advanced coating, heat treatment and Vacuum Brazing service. Hard coatings available include DLC, Titanium Nitride, Chromium Nitride and other high performance ceramic and carbon based coatings.

Wallwork also designs, builds and supplies production PVD coatings and bespoke research vacuum systems and is a partner in a number of pan-European collaborative research projects.

Wallwork operates 24/7 with nationwide logistics support and meets recognised quality and process accreditations for the likes of Rolls Royce and BAE systems ISO 9001 and PRI NADCAP.

### WALLWORK HEAT TREATMENT GROUP

#### Wallwork Manchester

Treatments in Bury include carburising, case hardening, and nitriding and nitro carburising and extend to Tufftriding™ and cryogenic treatments as well as hardening, tempering, annealing, normalising, stress relieving, austempering and martempering. Capacity includes gas atmosphere, salt bath and vacuum processes. The site also has capacity for the supply of DFL products MoS<sup>2</sup> and Xylan®.

#### Wallwork Cast Alloys

The Wallwork Cast Alloys foundry supplies high quality heat resistant castings and precision components for high temperature materials, mainly Nickel and Chromium Ni/Cr alloys. Services include recycling, in-house design and pattern making, rapid response emergency replacement castings and metallurgical analysis.

#### Wallwork Birmingham

This full service operation support the motor sport and automotive sector with comprehensive services that extend from large traditional salt bath furnaces to the latest vacuum processing units.

#### Wallwork Newcastle

Sub Contract heat treatment including: sealed quench and tempering, vacuum and induction hardening and plasma nitriding. PlasOx coating techniques as well as DFL products MoS<sup>2</sup> and Xylan® are also supplied.