

## Well lubricated around the world

### Kinematic components for high temperature ranges from South Tyrol with special lubricants from Vöhringen

Apparatebau Gronbach GmbH in Neumarkt-Laag, South Tyrol, is a medium-sized supplier in the area of sheet forming, welding and assembly technology. The company's specialist area is the development and production of kinematic and aesthetic components such as mechanical components and assemblies for well-known companies of the household appliance industry. Many innovations, special developments and user-oriented solutions have made Apparatebau one of the leading suppliers in this field. To ensure that mechanical components keep for a long time, they must be perfectly lubricated. For this reason, the company has worked closely with the German Chemie-Technik GmbH for years. Together they have created a new, NSF H1-registered special lubricant, and another one is now being developed.



Apparatebau develops and produces, among others, hinges and pull-out rails for all well-known manufacturers of household appliances. **Gerold Meurer**, Head of Innovation at Apparatebau: ***“We support our clients throughout the whole process: From product development, equipment construction, sample manufacturing up to***

***implementation in serial production.”*** Apparatebau also maintains a similarly close relationship with its suppliers, such as Chemie-Technik GmbH. ***“We have been relying on ELKALUB’s lubricant for over 15 years and are very happy with its quality.”***, says **Gerold Meurer**. And this entails some quite complex tasks.

#### **Special requirements for lubricants: Pyrolysis temperatures and electromechanic hinges**

##### **Pyrolytic oven:**

While temperatures in standard ovens go up to 300 °C, pyrolytic ovens reach peak values of 500 °C in the cleaning phase. Normal lubricants fail to work at these temperatures. This is why lubricated pull-out rails must usually be taken out of the oven during pyrolysis. To be able to leave them in the oven during pyrolysis in the future, ELKALUB developed a new special lubricant with Apparatebau: ELKALUB VPG 927 grease is based on a specially thickened and non-toxic base oil which evaporates at high temperatures and leaves a wafer-thin film of solid lubricants

which lubricates the pull-out rails in a durable manner. The product is of course suitable for food contact and has a NSF H1 certification.

**Important contribution to “intelligent living”:**

The cooperation also provides an important contribution to “intelligent living”: Devices are increasingly connected in the “smart home”, and can be thus controlled from any location. For this new age in the residential and household sector, Apparatebau has developed products such as the “e-Hinge”, an electromechanic oven hinge. With this, oven doors can be open and closed automatically through sensor or smartphone controls, for example after the cooking and baking process in order to air the cooked product. The requirements for lubrication points and lubricants are also high for the “e-Hinge”: The electronically controlled actuators generate high forces at the bearing positions, in addition, the lubrication must be guaranteed for a device life long. The co-development of a suitably formulated grease together with (kein the) Chemie-Technik GmbH is still in its infancy, however, the first ELKALUB laboratory samples are already being tested by Apparatebau.

**Long since tried and tested:**

**Oven door hinges by Apparatebau Gronbach with ELKALUB GLS 962/N2**

The combination of ELKALUB GLS 962/N2 and the oven door hinge G1 has proven its reliability in the series millions of times. It must withstand 150,000 closing cycles in the hinge lifecycle. Route and force-controlled kinematics are used in the curved hinge G1. The movement pattern is given by a curve, the force by a coil spring. The spring is replaceable and can be adjusted to the door weight. So that the curved hinge can work for a long time and unnoticed, it is also built to save space and can be cleaned easily.

ELKALUB GLS 962/N2 grease guarantees lifetime lubrication through a synthetic base oil mixture (PAO/Ester) with high viscosity (460 mm<sup>2</sup>/s); it is resistant to oxidation and temporarily temperature-resistant up to 250 °C.

**Dr. Frank Schulz**, Head of Research and Development at Chemie-Technik GmbH, outlines further benefits:

***“The special suitability of the NSF H2-registered grease ELKALUB GLS 962/N2 consists in the fact that it reduces the ‘stick-slip effect’ which primarily occurs at temperatures over 100 °C. It also has very good properties in conjunction with glass fibre-reinforced PA (polyamide) and galvanised steel.”***



**More about ELKALUB GLS 962/N2**

**ELKALUB GLS 962/N2 in the online product finder**