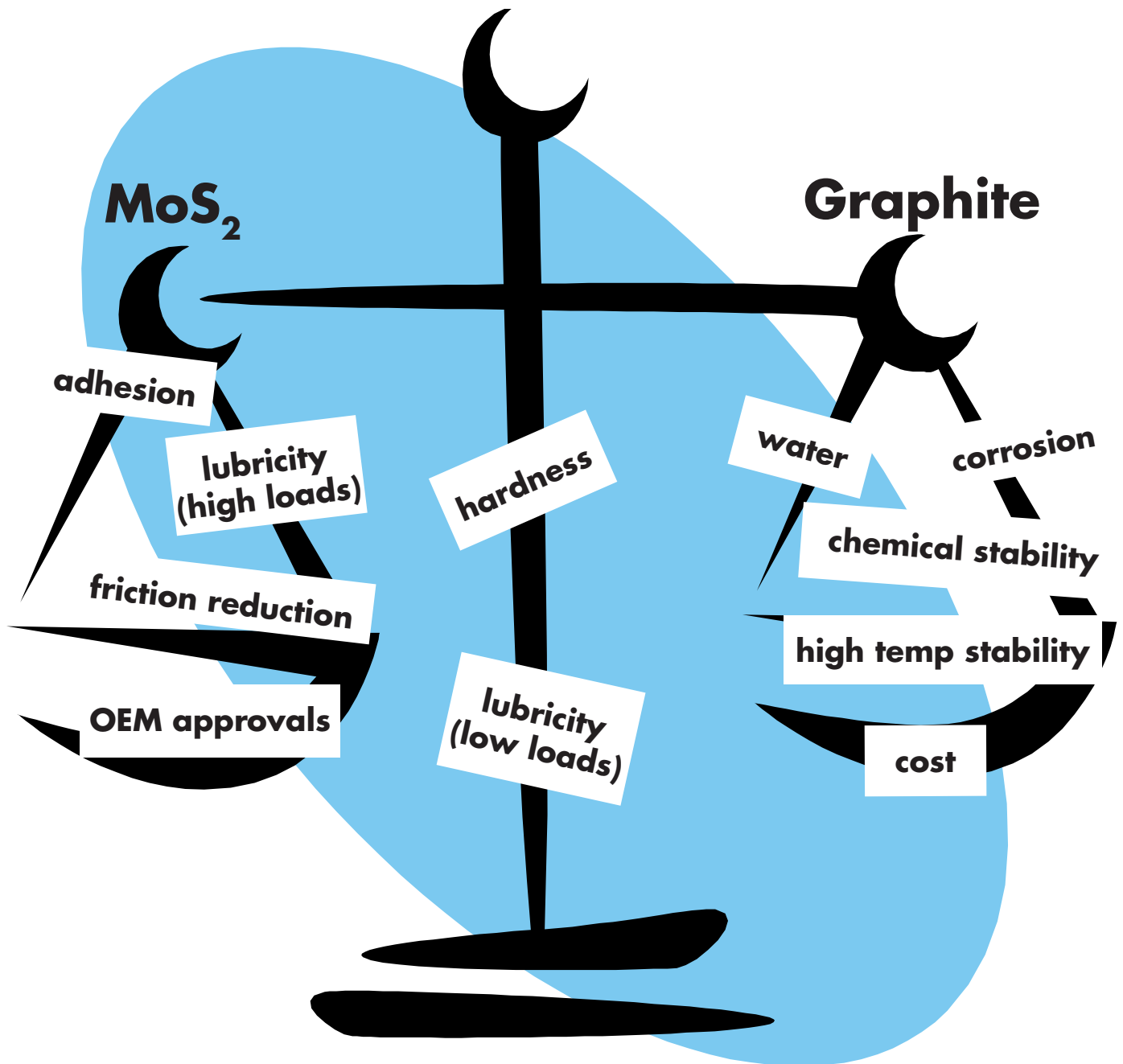


Black is Black



MOLY and/or GRAPHITE ??

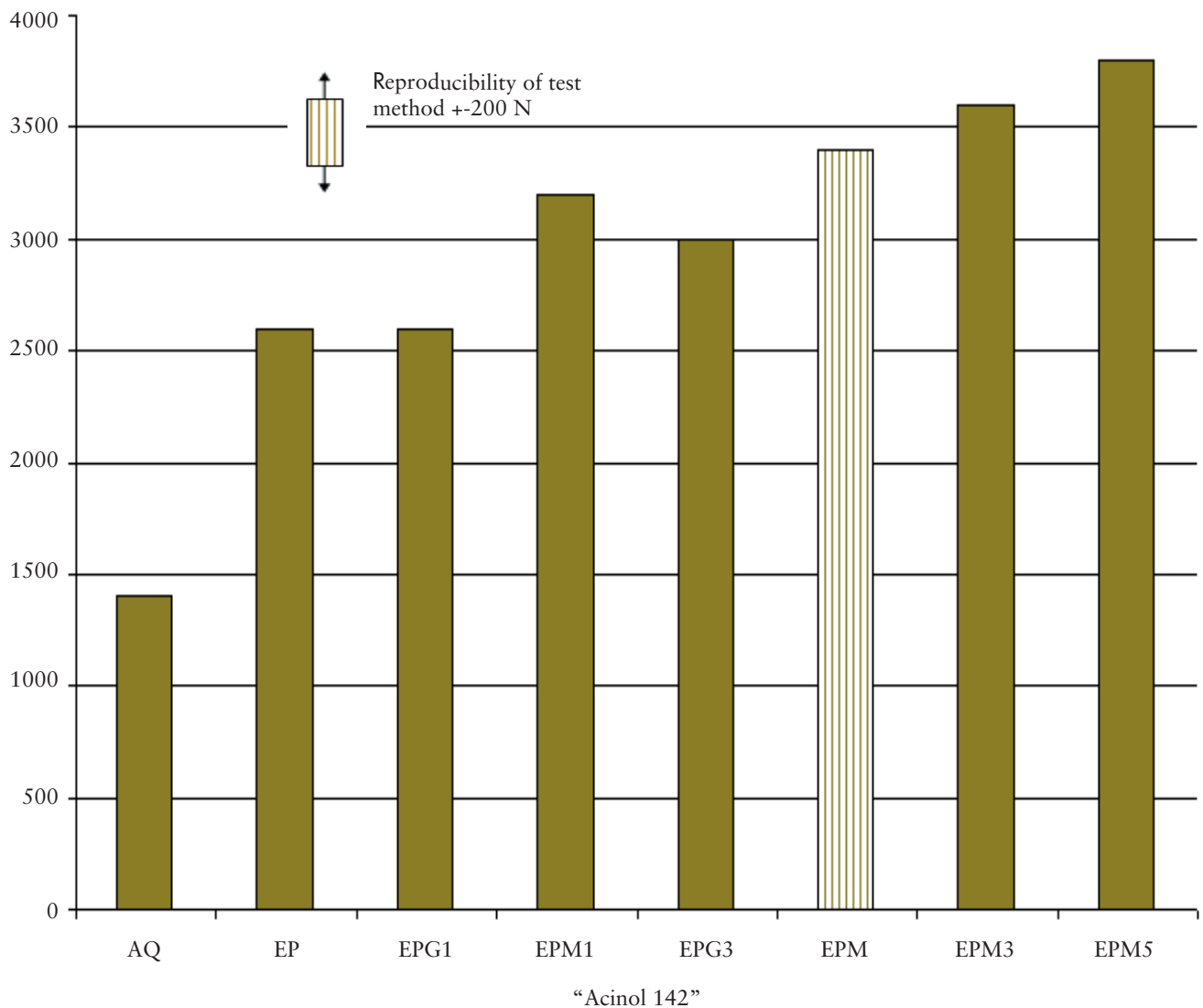
The 4-ball weld load is a standardised grease test designed to determine the ability of a product to withstand heavy loads. This is one of the most common specifications used by lubricant specialists to differentiate between product brands. The following results have been obtained by testing different versions of one and the same conventional lithium based multipurpose grease. The only variation between the different versions is the type and amount of solid additives.

At face value, given specifications can be met using a combination of graphite and molybdenum disulphide in-

stead of the currently very expensive option of using only the molybdenum based material. The 5% level of molybdenum disulphide is used especially for “Caterpillar” and, in this case, the specification stipulates the amount of molybdenum disulphide and not a given test result. A mixture here is therefore out of the question.

ACINOL 142 EPM is an excellent and less expensive alternative to products containing 3% MoS₂

4-ball weld load (N)
DIN 51350:4



% MoS ₂	0	0	0	1	0	1	3	5
% Graphite	0	0	1	0	3	2	0	0

ACINOL 142 EPM



MULTI-
PURPOSE



EXTREME
PRESSURE



CORROSION
PROTECTION

CLASSIFICATION

DIN 51502
ISO 6743

KPF2K-30
ISO-L-XCCIB2

PRODUCT DESCRIPTION

ACINOL 142 EPM is a lithium thickened lubricating grease based on mineral oil. The grease contains antioxidants, corrosion inhibitors, EP/AW additives and 3 % solids.

The product is a typical multipurpose “moly” grease which can be used in various applications within given temperature limits. The lubricating grease offers good stability, load carrying capacity and corrosion protection, making it suitable for heavily loaded slow moving bearings as well as wet environments.

- High load carrying capacity
- Good corrosion protection

ACINOL 142 EPM is a high quality multipurpose “moly” grease that can be used in both industrial and automotive applications. The combination of molybdenum disulphide and graphite gives extra protection in applications with slow moving or oscillating bearings. Lubricating greases with solids are not suitable for rolling bearings at high speed.

TYPICAL TECHNICAL DATA

Thickener		Lithium
Base oil		Mineral oil
Colour	Visual	Dark grey
NLGI Grade	ASTM D217	2
Dropping point	IP 396	>180°C
Base oil viscosity at 40°C	ISO 12058	110 mm ² /s
Base oil viscosity at 100°C	ISO 12058	12 mm ² /s
4-ball weld load	DIN 51350:4	3200 N
Temperature range		-30°C to +120°C Max +130°C

Does it have to be black?

In the past, the “black” colour of a molygrease was seen as an indication of strength. A black grease was needed for heavy shock loads where the solid material was assumed to be rubbed into the asperities on the metal surfaces to provide some kind of “running-in” effect. This has since proved to be a truth requiring modification. AXEL has, for instance, developed the so-called “Alassca” technology where these heavy loads can be absorbed by the thickener system in the grease and the need for the solid additives has been minimised. Given specifications (4-ball. Timken, FZG etc) can be met using products containing no solid additives at all. These products can be produced in a light colour and this is now seen as an advantage rather than a weakness in comparison to the “black” products of the past.

If solids are deemed to be necessary for the application (rather than the specification), products containing much lower quantities of the black additives can be developed where the lower solid content is compensated by either liquid additives and/or the incorporation of other types of solid materials (white, yellow etc). Examples of such materials are calcium carbonate, zinc oxide, cesium fluoride, boron nitride, PTFE, potassium borate and organo-molybdenum compounds.

Considering the continuing upswing in the price of molybdenum disulphide, it can be worthwhile evaluating other options. A mixture of graphite and molybdenum

disulphide, for example, can give economic advantages where the given amounts of solid additives are not specified by any particular OEM. Other greases containing state-of-the-art additive packages can meet the specifications without the use of solid materials and the addition of black particles can be then considered “cosmetic” depending whether or not the end-user has that expectation. But does such a grease have to be black? The simple answer is “no”.

In the AXEL product range, there are all the different options. Greases containing given percentages of molybdenum disulphide, greases containing different amounts of black solids, greases containing light coloured solids, greases containing no solids at all. All these greases can be designed to fit any given specification and the question becomes a matter of customer preference and, of course, a matter of cost.

AXEL's Customised label concept provides the flexibility to give our clients exactly what they need. The cost of the raw materials is, however, still a major part of our final sales price and large quantities of expensive materials will, of course, be a dominant feature in any pricing mechanism.

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