G-METAL® self-lubricating material

for smooth & efficient operation of your machinery

TRUSTED ORIGINAL MANUFACTURER SINCE 1965

Glebus Alloys, trusted manufacturer of plain bearings, bushings, sliding plates and wear parts made of G-Metal®, sintered self–lubricating material containing graphite as solid lubricant uniformly distributed throughout the metallic matrix. The Glebus Alloys' know-how originates from a well-known specialty powder metallurgy manufacturer Ceramet founded in 1965 in Poland.

Easy to deal with

We provide a personal and easy way of communication from initial inquiry to after sales service. Put us to the test.

Reliable partner

Choosing the right partner for your bearing needs is a matter of trust. Consistency in product and service quality, loyalty and respect are our core values. We strive to be long term partners for our customers. We look back to decades of continuous development and reliable service for the industry.

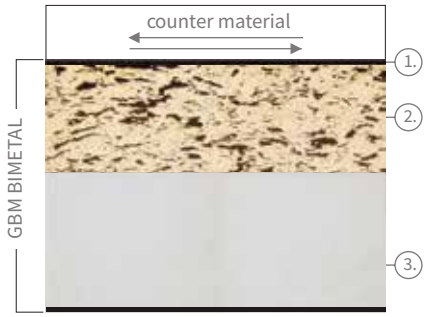
G-Metal® Self-lubricating Material

G-Metal® is a maintenance free, self-lubricating high performance sliding material. The metallic matrix of tin bronze, iron, iron-nickel-copper, nickel-copper-iron or nickel is impregnated with solid lubricants such as graphite. Glebus Alloys offers both solid metal (GSM) and bi-metallic (GBM) solutions. Bimetallic products (GBM) are made of stainless or low carbon steel backing covered with a sintered sliding layer.

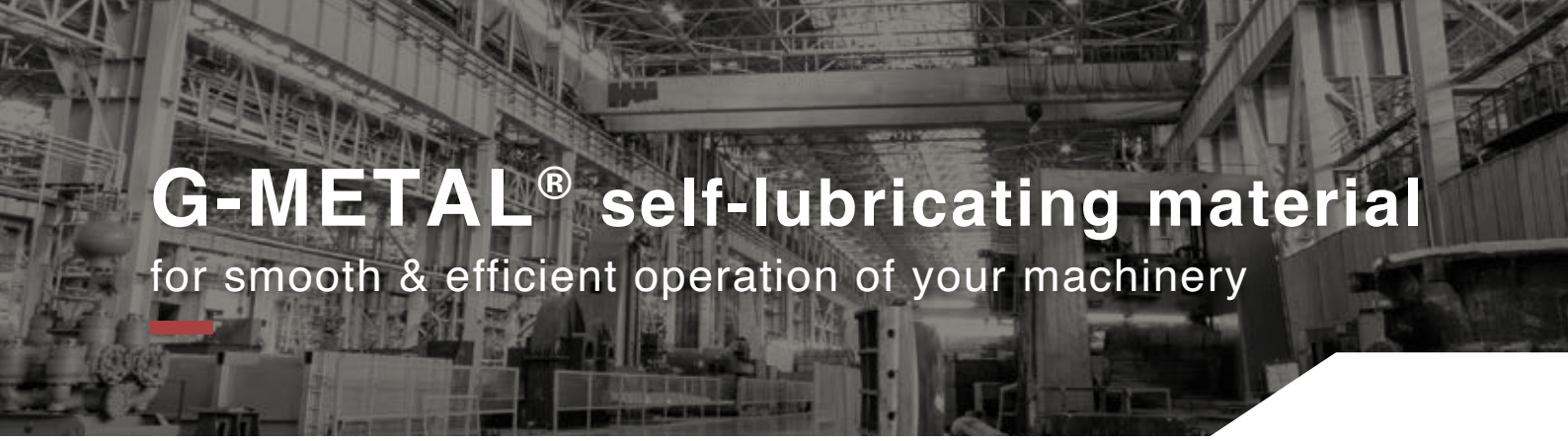
GSM Structure

METALLIC MATRIX (yellow color): bronze, nickel or iron-base
SOLID LUBRICANT (dark areas): graphite, MoS2

GBM Structure



1. SLIDING SURFACE optionally with running-in film applied
2. SLIDING LAYER bronze matrix (yellow color) with embedded solid lubricant (dark areas)
3. BACKING LAYER steel or bronze



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Technical specifications

GSM MONOMETALLIC	
MECHANICAL PROPERTIES	
Tensile Strength [MPa]	55 - 90
Compressive Strength [MPa]	250 - 640
Hardness [HB 2.5/62, 5/15], min.	40 - 80
Density [g/cm³]	6 - 6.7
Type of solid lubricant	Graphite (+MoS_2)
APPLICATION DATA	
Max. static load [MPa]	70 - 250
Max. dynamic load [MPa]	30 - 130
Max. sliding speed, dry [m/s]	0.2 - 0.5
Max. PV dry [N/mm² x m/s]	0.5 - 1.5
Typical coefficient of friction, dry	0.11 - 0.5
Typical coefficient of friction, wet	0.11 - 0.18
Service temperature min/max [°C]	-200 / 650
DIMENSIONS (Custom design and sizes are optional)	
BUSHES	
Length min/max [mm]	15 - 80
Outer diameter min/max [mm]	14 - 440
PLATES	
Thickness min/max [mm]	5 - 60
Length [mm]	up to 245

GBM BIMETALLIC	
MECHANICAL PROPERTIES	
Tensile Strength [MPa]	-
Compressive Strength [MPa]	300 - 320
Hardness [HB 2,5/62, 5/15], min.	40
Density [g/cm³]	6.5
Type of solid lubricant	Graphite
APPLICATION DATA	
Max. static load [MPa]	260 - 320
Max. dynamic load [MPa]	80 - 150
Max. sliding speed, dry [m/s]	0.3 - 0.5
Max. PV dry [N/mm² x m/s]	0.5 - 1.0
Typical coefficient of friction, dry	0.1 - 0.2
Typical coefficient of friction, wet	0.1 - 0.15
Service temperature min/max [°C]	-150 / 280
DIMENSIONS	
BUSHES	
Length min/max [mm]	10 - 100
Outer diameter min/max [mm]	12 - 950
PLATES	
Thickness min/max [mm]	2.5 - 15
Length [mm]	up to 695

Important remark: the above mentioned material properties, in particular friction coefficients, are not assured properties. They are to be used only as guideline for selection of materials.

Shapes

The material can be formed into many shapes and sizes including wear plates, rolled bushings, cylindrical bearings, spherical bearings, split bearings, sleeves, liners, guides and other customizable shapes. A patented conical wear plate is also available for certain industry applications. Unlike graphite plugged bronze, the material keeps its self lubricating properties during the entire wear life cycle of whatever part it is formed into.

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