

MG-F

Machineable Putty

GENERAL DESCRIPTION

MG-F is a stainless steel filled putty, which is engineered for use where final precision machining is required. Typical applications include shaft repairs, pump parts, bearing housings, or anywhere requiring final machining to close tolerances.

FEATURES

- Easily machined
- Very good wear resistance
- Excellent corrosion resistance
- Good temperature resistance
- Easily worked with in thick applications
- Excellent compressive strength
- Machineable with conventional tools

PACKAGING

1 kg and 4 kg. units

COVERAGE

MG-F can be applied up to 1 inch or more. Theoretical coverage at 40 mils in thickness is 6.5 sq. ft. per kg.

MIXING RATIO

3 parts base (B) to 1 part hardener (A) by weight
3 parts base (B) to 1 part hardener (A) by volume

POT LIFE

For a 1 kg. unit, mix at 70°F, pot life is approximately 25 minutes. Higher temperatures or larger mixes will shorten this time. Lower temperatures or smaller mixes will extend it. Pot life can also be extended by spreading out the mass to dissipate heat.

COLORS

MG-F is steel grey in color.

TECHNICAL DATA AND INFORMATION

Basic Chemical Resistance at Room Temperature:

Inorganic Acids	Good
Organic Acids	Good
Solvents	Good
Alkalis	Excellent
Salts	Excellent
Alcohols	Excellent
Hydrocarbons	Excellent

Typical Physical Properties of Cured System:

Density	1.62
% Solids	100
Flexural Strength @ 70°F	17,600 psi
Tensile Strength @ 70°F	11,500 psi
Tensile Shear @ 70°F	3,000 psi
Compressive Strength @ 70°F	18,000 psi
Max Dry Operating Temp.	300 °F
Max Wet Operating Temp. (water)	250 °F
Operating pH Range	1.5-14.0

SURFACE PREPARATION

The area to be repaired should be machined down so that it is undercut to a minimum of 1/16 of an inch. The surface of the cut should be rough; a thread pattern or gramophone cut should be used. The ends of the cut should be keystoneed or undercut as far as the bit can cut, leaving a fine edge on the shaft. After machining, the area must be thoroughly cleaned with **MEK** or similar solvent to remove all traces of cutting or lubricating agents.

MIXING

Mix ALL of Part A with ALL of Part B. Mixing may be done in a container large enough to hold both the base and hardener. The selected container must be clean and dry. Mix the material thoroughly until no streaks of any kind are visible. If materials are cold, warm them to 70°F before mixing.

CLEANUP

Most solvents and commonly used thinners such as MEK, acetone, xylene, 1,1,1 trichloroethane, and safety solvents such as Ensolv, etc., can be used for cleaning tools and equipment. However, as many of these materials are flammable or present other safety hazards, the user should read the MSDS for these materials before using. In no event should these materials be used to clean material from the skin, eyes or clothing.



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APPLICATION

MG-F is best applied with the spatula or plastic applicator supplied with the kit. The material should be thoroughly and firmly pressed into the threads to insure a completely wetted out surface. Particular attention should be given to the undercut or keystone areas at the edge of the cut. Build up to approximately 40-60 mils proud beyond the required thickness.

- Min. Thickness/Coat (mils) 30
- Max. Thickness/Coat (mils) 500
- Number of Coats 1-2
- Min. Application Temperature (°F) 40

For best results, do not apply:

- When humidity is over 95%
- When there is moisture on the surface
- When surface temperature is not 5°F above dew point

MACHINING SPECIFICATIONS

TURNING

Surface Cutting Speed:	2600 in/min
Feed Rate for Roughing:	40 thou/rev
Feed Rate for Finishing:	10 thou/rev
Tool:	Firth Brown TTA Code
Top Rake:	3 degrees
Side Clearance:	3 degrees
Front Clearance:	3 degrees
Comparison with mild steel and aluminum:	30% longer tool life
Comparison with casting Alloy and zinc:	Comparable
Comments:	Cut dry

KEYWAY MACHINING-VERTICAL MILLING

Cutter Speed:	520 rpm minimum 3300 in./min. for 2 inch cutter
Table Traverse:	3-6 in./min.
Tool:	High speed steel standard end mills
Rake:	Standard
Comparison with mild steel and aluminum:	30% longer tool life
Comparison with casting Alloy and zinc:	Comparable
Comments:	Cut dry

SLOT DRILLING FLAT OR SLOT

Cutter Speed:	400 rpm, 2600 in./min. for 2" cutter
Table Traverse:	6 in./min.
Tool:	High speed steel
Comparison with mild steel and aluminum:	30% longer tool life
Comments:	Cut dry

OVERCOATING

For thicker buildup two or more coats may be employed. Overcoating may commence as soon as the first coat is firm enough to accept a second coat, but no later than the point where a tack free film is evident.

MG-F Overcoating Window

55°F	70°F	85°F
1-4 h	1-3 h	1-3 h

CURING @ 70°F

- Dry to Touch (hours) 2
- Functional Cure (hours) 24
- Full Cure (hours) 120

Q/C

The material should be visually inspected just after machining, and if necessary, touched up and re-machined.

FORCE CURING

Force cures are recommended for severe service conditions as both the physical and chemical properties are enhanced. Force curing should not start until material has firmly set.

Recommended Force Cure Schedule:

- Full Cure 4 hours @ 180°F
- Functional Cure 8 hours @ 120°F

STORAGE/SHELF LIFE

Store in dry area in closed containers between 50°F and 100°F. Shelf life at these conditions is greater than one year.

HEALTH AND SAFETY

READ AND UNDERSTAND ALL MATERIAL GIVEN IN THE MSDS SHEETS BEFORE USING THE PRODUCT.

MG-F DOES NOT CONTAIN ANY FLAMMABLE MATERIAL OF ANY KIND. HOWEVER, THE MATERIAL IS COMBUSTIBLE. IN THE EVENT OF A FIRE, DRY POWDER, FOAM, OR CARBON DIOXIDE FIRE EXTINGUISHERS SHOULD BE USED. FIRE FIGHTERS SHOULD WEAR RESPIRATORS.

USE PROTECTIVE GLOVES AND EYEGLASSES WHEN USING.

USE IN AREAS OF GOOD VENTILATION.

LIMITED WARRANTY

All recommendations covering the use of this product are based on past experience and laboratory findings. Methods or conditions of application and use of the product are beyond our control. We assume responsibility only for the uniformity of our product within normal manufacturing balances.

All Duromar products are formulated based on over 25 years of experience, laboratory tests, material data, field installations, and technical publications, which we believe to be, to the best of our knowledge, accurate and reliable. This information is intended to be used for guidance only. Because the only true reliable test is one that is in actual operation, Duromar will make available at no charge samples of materials for that testing purpose. Duromar, Inc. has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Duromar, Inc. does, therefore, not accept any liability arising from loss, injury, or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise). The data contained herein is liable to modification as a result of practical experience and continuous product development. This data sheet replaces and annuls all previous issues, and it is, therefore, the user's responsibility to ensure that this sheet is current prior to using the product.



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