

# NON GALLING DEW88MET

**IT'S WHAT FOOD MACHINERY MANUFACTURERS  
HAVE BEEN WAITING FOR.**

- *Do you manufacture machinery for use in the food industry?*
  - *Do you require the use of a non-galling material?*
    - *Must this material be corrosion resistant?*
    - *Must this material be copper and lead free?*

If you answer yes to the above questions, we at Auld believe we can offer you a cost effective solution to your material procurement requirements.

○ DEW88MET provides the answer to engineers who require a material which can be used with extremely close running tolerances in sliding contact whilst providing high corrosion resistance in a wide range of hostile environments.

○ Nickel based DEW88MET not only meets this exacting demand but is particularly acceptable in the food processing industry as it is copper and lead free.

○ In addition, alternative corrosion resistant bearing materials show extremely poor test results compared with DEW88MET when subjected to continuous rotational sliding loading.

○ For further technical or commercial information on how DEW88MET can help your company, please do not hesitate to contact us.

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CE  
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Lloyds Approved in-house foundry  
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**AULD**<sup>®</sup>  
PRESSURE CONTROL AND SAFETY VALVES

## DEW88MET

Nickel based DEW88MET provides the answer to engineers who are searching for a material which can be used with extremely close running tolerances in sliding contact whilst providing high corrosion resistance in a wide range of hostile environments. DEW88MET not only meets this exacting specification but is particularly acceptable in the food industry as it is copper free. Application engineers know that stainless steel on stainless steel gives severe galling and adhesive wear; indeed its qualities in close sliding contact are so poor that meaningful test results cannot be obtained. Alternative corrosion resistant bearing materials also show extremely poor test\* results compared with DEW88MET *when subjected to continuous rotational sliding loading.*

\* Tests conducted by University of Wisconsin Department of Metallurgical and Mineral Engineering.

## Corrosion Rates of DEW88MET

Product	Temperature	Weight Loss Mg/dm <sup>3</sup> /day	Corrosion Penetration I.P.Y.
Canned tomato juice	190°F	5.2	0.00085
Sodium Hydroxide Sol. 8lbs per 100gals	195°F	1.9	0.0003
1% Phosphoric Acid	195°F	None	None
Chlorine 400 ppm	75°F	1.1	0.0002
1% Sulphurous Acid	75°F	4.2	0.0008
Concentrated (1:6) Orange Juice	180°F	None	None
Sulphurous Acid	130°F		0.0006
Solution of Metramel 10.2% Sodium Chloride 8.8% Sodium Hydroxide 4.5%	130°F		0.0001
Solution of Hydrofluosilic Acid 0.1% Phosphoric Acid 0.06%	100°F		0.0001

## Physical Properties

Density	0.31 lb/in <sup>3</sup>	8.58 g/cm <sup>3</sup>
Linear coefficient of Thermal Expansion	32 to 500°F	8.01 x 10 <sup>-6</sup> in/in/°F
	(0 to 260°C)	14.42 x 10 <sup>-6</sup> cm/cm/°C
	32 to 1000°F	8.88 x 10 <sup>-6</sup> in/in/°F
	(0 to 540°C)	15.98 x 10 <sup>-6</sup> cm/cm/°C
Electrical Resistivity @ 77°F	112.7 mΩ/cm	
Thermal Conductivity @ 105°F	16.7 Btu/ft <sup>2</sup> /°F/ft = 2.409 W/(mk)	

## Typical Mechanical Properties

Mechanical Property	lbf	Mpa (MN)
Tensile strength	45000	310
Yield strength	38000	262
Proportional limit	25000	172
Elongation	7%	
Reduction of area	8%	
Modulus of elasticity	27000000	186158
Brinell hardness	150	
Impact strength Charpy V-notch	7 ft lbs	9.5 J

## Typical Alloy Combinations

	Normal pressures lbf	kPa	'F' dry	'F' wet
D88T sliding on Chromium plate	512	3530	0.33	0.19
	2560	17650	0.25	0.25
D88T sliding on 18.8 SS	512	3530	0.23	0.18
	2560	17650	0.10	0.10

## Independent Laboratory Test Results

1. National Centre of Tribology  
United Kingdom Atomic Energy Authority.
2. University of Wisconsin.

## Final Independent Laboratory Test Opinion

"DEW88MET is an excellent non-galling material."

## Falex Tests

Testing a DEW88MET pin on 316 stainless only slight galling took place in a totally unlubricated condition which was probably due to the inability of debris to escape. Testing in a straight mineral oil, which at the high pressures involved was only providing cooling and debris wash out; showed negligible pin wear and no evidence of galling with smooth final wear scars.

## Quality and Technical Control

All DEW88MET material is normally proof machined and dye penetrant checked and each batch is tested on a purpose built rig to check its anti-galling properties.

## Applications

DEW88MET has a wide range of applications including food, pharmaceutical, nuclear and fluid control etc.

Auld also supply high integrity castings in copper and ferrous alloys from our Lloyds Approved in-house foundry.

## For more information

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