GEOMET® is a product of NOF Metal Coatings Group (formerly DACRAL) of which ANOCHROME is the UK Licensee. Anochrome have been supplying NOF products for over 30 years.

GEOMET® is a Zinc Flake anticorrosive coating that has been developed to replace DACROMET®

GEOMET® is supplied as:-
- GEOMET® 500
- GEOMET® 321
- GEOMET® 720

GEOMET® General Properties.
- Thin dry film
- Water based chemistry
- Non electrolytically applied.
- Chromium free
- Passivated zinc and aluminium flakes in an inorganic binder, Patented chemistry.
- Metallic silver grey appearance.

Characteristics and performance
- Does not induce hydrogen embrittlement (suitable for high tensile fasteners)
- Performance maintained at elevated temperatures (300°C)
- Electrically conductive, suitable for most applications.
- Bimetallic compatibility with aluminium
- Good mechanical damage (test D24 1312, USCAR 32) and chemical (test VDA 621-412) resistance.
- Can be used with or without topcoats
- Less parts sticking together when coating in bulk.

GEOMET® 500 was developed specifically with integral lubricant for coating fasteners, to assist in giving consistent tightening performance.

GEOMET® 500 specific properties
- Controlled Coefficient of Friction 0.15 ± 0.03 (test to EN ISO 16047 type HH)
- Integral lubricant gives excellent assembly and multi-tightening behaviour.
- Absence of stick-slip problems when tightened against cote and other organic coatings.

GEOMET® 321 used for non fasteners, and with lubricated top-coat to give range of lubricity, also supplied with Black top-coat.

Topcoats supplied by Anochrome are

<table>
<thead>
<tr>
<th>Coefficient of Friction µ</th>
<th>PLUS® XL</th>
<th>PLUS® VL</th>
<th>PLUS® ML</th>
<th>PLUS® 10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.06 to 0.09</td>
<td>0.09 to 0.14</td>
<td>0.10 to 0.16</td>
<td>≥ 0.20</td>
</tr>
</tbody>
</table>

All PLUS®’s are low thickness but increase corrosion resistance, PLUS® 10 is used to insulate GEOMET® to protect further from galvanic corrosion (e.g. Hose clips on carbon rich rubber).

GEOMET® 720 is supplied mainly for Japanese assembly plants.

GEOMET® 360 developed for spray coating Disc Brakes. Used by Anochrome on the Automatic Spay line for Discs.

Advantages:-
- By selective spraying, the braking surface can be coated with a thin layer, that does not damage the quality of braking and gives temporary protection to point of sale.
- Temperature resistance is up to 400°C.
- Gives protection inside the vents.
- The corrosion protection of GEOMET® on the hub mounting surface makes disc demounting easier.
- For after market, GEOMET® coating enables the brake disc to be assembled onto vehicles without degreasing.

GEOBLACK® is the combined coating of GEOMET® with the water based topcoat of PLUS ML Black which gives:
- Even semi-bright chemical resistant black colour
- High salt-spray resistance. (1000hrs. +)
- Controlled Coefficient of Friction 0.15 ±0.03.
- Thin coating, approx.5-8µm of black, minimal stuck parts when processed in bulk.

GEOMET® 720 is supplied mainly for Japanese assembly plants.

Other GEOMET® materials available are:-

Coatings available from WEP Ltd
Wood Lane, Fordhouses, Wolverhampton WV10 8HN
tel: 01902 397300 fax: 01902 785372
enquiries@anochrome-group.co.uk
www.anochrome.co.uk

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GEOMET® Protection Principals.

GEOMET® is formulated with an aqueous base and is composed of zinc and aluminium flakes in an inorganic binder. It is chromium free. GEOMET® gives protection to metallic surfaces with:

- Barrier protection – Overlapping zinc and aluminium flakes provide an excellent barrier between the steel substrate and the corrosive atmosphere. (see microphotograph above)
- Galvanic action – Zinc corrodes to protect the steel
- Passivation – Metal compounds slow down the corrosion reaction of zinc and steel to provide a greater protection (slower reaction) than with pure zinc.

The combined effect of these processes enables GEOMET® to give excellent corrosion protection with low thickness, typically between 5 and 10 µm.

GEOMET® Coating Process

- Treatment of small parts
  Small parts (most Fasteners) can be treated in bulk in baskets, a minimum of two coating operations of GEOMET® is necessary to obtain an even coverage.
  The typical treatment process is illustrated below:

- Treatment of large parts
  GEOMET® can be racked (jigged) and dip-drained, dip-drain-spin or sprayed.

Evaporative loses from GEOMET® are made up by the addition of water. Curing takes place at 300ºC.

GEOMET® has been tested and approved by the automotive industry, the results of different cyclic corrosion tests, GM 9540 P Toyota CCT-A, Ford APGE, Renault ECCI (Al) or VDA 621-415, confirm the performance of GEOMET.
GEOMET® Salt Spray test performance

<table>
<thead>
<tr>
<th>Coating</th>
<th>Top-coat</th>
<th>Colour</th>
<th>Total thickness</th>
<th>Salt Spray (to ISO 9227)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geomet ®500</td>
<td>None</td>
<td>Silver</td>
<td>≥6 µm</td>
<td>≥600hrs. without red rust</td>
</tr>
<tr>
<td>Geomet ® 500</td>
<td>None</td>
<td>Silver</td>
<td>≥8 µm</td>
<td>≥1000hrs. without red rust</td>
</tr>
<tr>
<td>Geomet ® 321</td>
<td>None</td>
<td>Silver</td>
<td>≥6 µm</td>
<td>≥600hrs. without red rust</td>
</tr>
<tr>
<td>Geomet ® 321</td>
<td>Plus®</td>
<td>Silver</td>
<td>≥7 µm</td>
<td>≥720hrs. without red rust</td>
</tr>
<tr>
<td>Geoblack®</td>
<td>Plus® ML Black</td>
<td>Black</td>
<td>≥10 µm</td>
<td>≥1000hrs. without red rust</td>
</tr>
<tr>
<td>Geomet ® 720</td>
<td>None</td>
<td>Silver</td>
<td>≥6 µm</td>
<td>≥1000hrs. without red rust</td>
</tr>
</tbody>
</table>

GEOMET® is supplied by NOF Metal Coatings Europe SA, which is a division of the worldwide NOF Metal Coatings Group. For more than 30 years, innovation and the environment have been of paramount importance in their development of zinc flake thin layer anticorrosive coatings. As inventors of this technology they have been continually improving it, and ensuring it is suitable for the application processes used worldwide. NOF products play a key role in the automotive industry. Their know-how is recognised worldwide for its efficiency and adaptability, it is the benchmark in many sectors of activity. There are 400 licensees with over 450 application lines. All licensees are regularly audited by NOF personnel to ensure optimum quality. Further information can be obtained from www.nofmetalcoatings.com

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GEOMET® satisfies the following Specifications:

International Standards
EN ISO 10683 Fasteners : Non-electrolytically applied Zinc Flake coatings.
EN 13858 Non-electrolytic zinc flake coatings on iron and steel.
BS 7371 Pt. 11 Specification for zinc flake non-electrically applied cured coatings
ASTM F1136 / F1136M – Zinc/Aluminium Corrosion Protective Coatings for Fasteners

OEM Standards
FORD WSS M12P49
JLR.50.5050. & 50.5047.
HONDA HES D2008
FIAT Capitolato 9.57513
IVECO 18-1101
BMW GS 90010 & QV 34 081
GM-Opel GMW3359
Daimler-Benz DML940, DML 8440
CHRYSLER PS-5873, PS-9666
Porsche PTL7529 PN 11011,
BREMBO Tab. 11.19
Renault 01-71-002/-R
Continental Teves ATE N 106 36.31
Renault Trucks 01-71-4002
PSA STE 9690469599
Peugeot-Citroen B15 3320
TRW TS2-25-060
Volkswagen TL245
VW Group TL 193
VOLVO Cars VCS 5737.29
Truck STD 5737.2
Mitsubishi MS82-3710
Moeller KT 65.15.259
ZF Lemforder LMH 50-6
Mazda MES CG 311F
SCANIA STD 4165
ALSTOM DTRF 150213
BOMBARDIER BT/CE-WN30-02
Borgwarner BW 61003
Caterpillar 1E16756
John Deere JDM F13
Knorr Bremse N12005
BOSCH N67F 827 & 0 204 Y 01582

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