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^o 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 top coats
- 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 e-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

- PLUS® XL 0.06 to 0.09
- PLUS® ML 0.10 to 0.16
- PLUS® 10 ≥ 0.20

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).

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:-

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 400ºC.
- 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.

GEOMET® 900 used for dip coating large parts to give an economical coating for parts such as subframes and fuel filler pipes.

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

NOF METAL COATINGS is a registered trademark of NOF CORPORATION
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 300°C.

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 (AI) or VDA 621-415, confirm the performance of GEOMET.

10 µm film thickness of lamellar structure by Electron Microscope

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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 (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geomet® 500</td>
<td>None</td>
<td>Silver</td>
<td>≥6 µm</td>
<td>≥600hrs, without rust</td>
</tr>
<tr>
<td>Geomet® 500</td>
<td>None</td>
<td>Silver</td>
<td>≥8 µm</td>
<td>≥1000hrs, without rust</td>
</tr>
<tr>
<td>Geomet® 321</td>
<td>None</td>
<td>Silver</td>
<td>≥6 µm</td>
<td>≥600hrs, without rust</td>
</tr>
<tr>
<td>Geomet® 321</td>
<td>Plus®</td>
<td>Silver</td>
<td>≥7 µm</td>
<td>≥720hrs, without rust</td>
</tr>
<tr>
<td>Geoblack®</td>
<td>Plus® ML Black</td>
<td>Black</td>
<td>≥10 µm</td>
<td>≥1000hrs, without rust</td>
</tr>
<tr>
<td>Geomet® 720</td>
<td>None</td>
<td>Silver</td>
<td>≥6 µm</td>
<td>≥1000hrs, without 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 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 DBL9940, DBL 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 LHM 50-6
- Mazda MES CG 311F
- SCANIA STD 4165
- ALSTOM DTRF 150213
- BOMBARDIER BT/CE-WN30-02
- Borgwarner BWS 61003
- Caterpillar 1E167S6
- John Deere JDM F13
- Knorr Bremse N12005
- BOSCH N67F 827 & 0 204 Y 01582

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