

NANOGRAPHİ YÜKSEK TEKNOLOJİ VE İLERİ MALZEMELER A.Ş.**Technical Data Sheet****PRODUCT INFORMATION**

Product Name	Micronkote 206 Black Dry Film Lubricant
Product No	NG10CMW0946
Type	Solvent-Based Anti-Friction Coating

TECHNICAL PROPERTIES

Test	Specification	Standard
As supplied		
Viscosity (Ford Cup No. 4) (s)	20±5 @ 25±2 °C	Internal test
Density (g/mL)	0.9±0.1	
Curing Temperature (°C)	235	
Curing Time (min)	45	
As cured		
Endurance Life (min)	450-500 @ 4,450 N	ASTM D2625 (Procedure A)
Load-Carrying Capacity (N)	19.000 - 20.000	ASTM D2625 (Procedure B)
Coefficient of friction (LFW-1, Rotating, 2,860 N load)	0.05 - 0.07	ASTM D2714
Coefficient of friction (LFW-1, Oscillating, 900 N load)	0.03 - 0.05	
Color	Black	ASTM D2244
L*	25,00 – 35,00	
a*	-0,10 – -0,02	
b*	-1,10 – -1,01	
Functional Lubrication Temperature Range (°C)	-60 to +250	Internal test

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Thermal Stability	Pass – No Deformation	IEC 60068-2-12
Adhesion Test	Pass – No Deformation	ASTM D2510 Proc. A / MIL-PRF-46010G
Resistance to Humidity	Pass – No Deformation	EN ISO 6270-1
Resistance to Fluids	Pass – No Deformation	ASTM D2510 Proc. A / MIL-PRF-46010G
Cross – Cut Test	Pass – No Deformation	ASTM D3359

INTRODUCTION AND APPLICATIONS

Micronkote Dry 206 is a solvent-based, dry-film anti-friction coating designed to reduce friction and wear on metal-to-metal contact surfaces while providing permanent lubrication and corrosion protection. The coating is particularly suitable for metal-to-metal applications operating at **slow to moderate speeds** and under **moderate to high loads**, including high-stress sliding surfaces, oscillating movements, and intermittent operating conditions.

Micronkote Dry 206 provides permanent dry-film lubrication for applications where the use of conventional lubricants such as oil or grease is technically impractical or where their performance is insufficient, particularly under elevated-temperature conditions.

Features and Benefits:

- Excellent lubricating performance,
- Low coefficient of friction,
- High load-carrying capacity,
- High wear resistance,
- High-temperature resistance,
- High corrosion protection,
- Resistance to oils, greases and solvents,
- Helps reduce and prevent fretting corrosion,
- Long-lasting lubrication,
- Black surface appearance,
- Long-term surface protection under demanding operating conditions, etc.

Recommended Applications

Micronkote Dry 206 is particularly suitable for:

- Metal-to-metal contact surfaces operating at low to medium speeds,
- Components exposed to medium to high mechanical loads,
- Mechanisms operating at low sliding speeds,
- Components subjected to oscillating movement,
- Intermittently operated mechanical systems,
- Sliding surfaces exposed to high loads and stresses,
- Components operating at elevated temperatures,

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- Applications where oil or grease lubrication is impractical or unsuitable,
- Metal surfaces requiring long-term or permanent lubrication, etc.

Typical Applications

Typical applications may include:

- Internal combustion engine piston rings,
- Engine tappets / valve lifter components,
- Magnetic armatures in automotive starter motors,
- Hood latch components,
- Highly loaded metal sliding surfaces,
- Mechanical components where oil and grease lubrication is impractical or unsuitable, etc.

HOW TO USE

1. Product Preparation

- Thoroughly mix the product before use until a homogeneous consistency is obtained.
- If viscosity adjustment is required for application, the product should be diluted with **Methyl Ethyl Ketone (MEK)** at a suitable ratio. The appropriate dilution ratio should be established according to the application equipment, substrate geometry and required film thickness.

2. Surface Preparation

- Proper surface preparation is critical to achieving optimum coating adhesion and service performance.
- The substrate must be completely free from contaminants that may adversely affect coating adhesion, including:
 - ✓ Dirt,
 - ✓ Dust,
 - ✓ Oil,
 - ✓ Grease,
 - ✓ Rust,
 - ✓ Residues from previous coatings,
 - ✓ Other surface contaminants.
- The surface should be thoroughly cleaned and degreased before coating application.

Metal Surfaces;

- ❖ Prior to coating, it is recommended to pretreat metal surfaces using a **ZnF- or MnF-based pretreatment bath**.
- ❖ Alternatively, suitable surfaces may be prepared by **180-grit abrasive blasting**.
- ❖ Phosphating and sandblasting processes improve the coating's adhesion to the surface, helping to extend the coating's service life.

Aluminum Surfaces;

- ❖ For aluminum surfaces, **anodizing or Alodine/conversion coating treatment** is recommended prior to coating application, where appropriate for the surfaces and application.

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3. Application

- Micronkote Dry 206 can be applied by spray or roller.
- The coating should be applied to a clean and appropriately pretreated substrate to produce a uniform film over the entire surface.

4. Pre-Curing

- Following application, the coated components should be allowed to stand at room temperature for approximately **15 minutes**.
- This pre-curing period allows the coating to level evenly and stabilize.
- After the recommended pre-curing period, the coated components should be transferred to the curing oven.

5. Curing

- After a preliminary curing period of approximately 15 minutes at room temperature, the coating must be cured in an oven.

Curing Temperature: 235 °C

Curing Time: 45 minutes

Preliminary Curing Period: Approximately 15 minutes at room temperature

- Curing conditions must be validated based on part geometry, substrate material, coating thickness, and the process equipment used.

Application Equipment

- The product can be applied using spray or roller application methods. For application;
 - A conventional paint spray gun,
 - An HVLP spray system, or
 - Appropriate industrial spray equipment
 - An appropriate industrial paint roller may be used.
- The nozzle diameter, air pressure, and product viscosity must be adjusted according to the desired dry film thickness and part geometry.

Important Application Notes

- Thoroughly mix the product before use.
- The surface to be coated must be clean, dry, and free of grease.
- Appropriate surface pretreatment is important for coating adhesion and service life.
- The product can be applied by spray or roller.
- If viscosity adjustment is necessary, MEK should be used.
- The recommended **dry film thickness (DFT)** is **5–23 µm**.
- After application, it is recommended to let the coating stand at room temperature for approximately 15 minutes before baking.
- The relevant Safety Data Sheet (SDS) must be reviewed before using the product.

SHEL LIFE AND STORAGE

Recommended shelf life: 12 months from the date of manufacture.

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The stated shelf life applies when the product is stored in its original, unopened packaging under the recommended storage conditions.

After opening, the container should be tightly resealed immediately after use to minimize solvent loss and changes in product properties.

Store the product:

- In the original, tightly closed container
- Away from direct sunlight
- Away from heat, sparks and open flames
- In a dry and well-ventilated area

Recommended storage temperature: +5 °C to +30 °C

Protect the product from freezing and excessive temperatures.

After extended storage, thoroughly mix the product until a homogeneous consistency is obtained before use.