

Material Safety Data Sheet

1. Chemical product and Company Identification

1.1 Product specification

106XXXXX 16AA9889 FE N16

2. Composition/Detail of Components

2.1 Chemical Characterization: Product

2.1.1 Description: This non-asbestos friction material is a multi-ingredient with system resins and rubber as a binding agent in a cured and vulcanized form.

2.2 Hazardous substance:

2.2.1

<u>Ingredient</u>	<u>Percent (w/w)</u>
Barium sulphate	5-15 %
Graphite	15-20 %
Aluminum Oxide	4-6 %
Para-Aramid Fiber	1-3%
Steel fiber	35-50 %
Sponge Iron powder	5-10%
Friction Dust	3-7%

3. Hazards Identification

This is a solid disc brake dark gray to black in color. There is no hazard when using the production correctly.

Potential Health Effects:

Ingestion: not available

Inhalation: see section 4.4

Skin: see section 4.2

Eye: see section 4.3

Information on Ingredients:

Exposure Routes: not available

Symptoms: not available

4. First Aid Measures

4.1 General Advice: There is no direct danger arising from the product and the ingredients. Contact with skin/eyes can cause irritations due to fiber-constituents.

4.2 Skin contact: After contact with powder constituents, wash off thoroughly with water.

4.3 Eyes contact: After contact with powder constituents, rinse with water thoroughly.

4.4 Inhalation Not a hazard under normal use conditions

4.5 Additional information Use NIOSH-approved respirator if exposure to dust in concentrations exceeding PEL's or TLV's is possible.

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5. Fire Fighting Measures

5.1 Suitable Extinguishing Agents: Water, Foam, ABC-powder, carbon dioxide (CO₂).

5.2 Special dangers caused by the material, its combustion or developing gases see section 10.2

Flash Point: Not applicable

Lower Explosion Limit: Not applicable

Upper Explosion Limit: Not applicable

Auto Ignition Temperature: Not determined

Material will burn in fire .

5.3 Special protective equipment and precautions for firefighters:

Fire fighters should be equipped with NIOSH – Apparatus (SCBA) and full protective clothing

6. Measures When Unintentionally Released

6.1 Additional Notes:

Information for safe handling see section 7.

Information for product disposal see section 13.

7. Handling and Storing

7.1 Handling

7.1.1 Information for safe handling:

Avoid generating dust from this product. Clean up using methods that do not generate dust such as a HEPA vacuum or wet clean up. Avoid pneumatic removal of dust. If dust is generated, use a NIOSH approved respirator.

Minimize dust generation and accumulation.

Dust removing by suitable industrial vacuum – cleaner or central exhausting.

7.2 Storing

7.2.1 Store in a dry and ventilated storeroom. Do not store together with corrosive substances.

8. Exposure Controls and Personal Protection

8.1.1 Exposure guidelines:

Barium sulfate (7727-43-7)

ACGIH: 10 mg/m³ TWA

OSHA: 10 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction).

NIOSH: 10 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable dust).

Graphite (7782-42-5)

ACGIH: 2 mg/m³ TWA (respirable fraction, all forms except graphite fibers)

OSHA: 2.5mg/m³ TWA (respirable dust).

NIOSH: 2.5mg/m³ TWA (respirable dust).

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Aluminum oxide (1344-28-1)

ACGIH: 10 mg/m³ TWA (as Al, particulate matter containing no asbestos and <1% crystalline silica)

OSHA: 10 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)

8.1.2 Exposure limits for Particulates not otherwise regulated (Nuisance dust)

PEL: 15mg/m³ total dust; 5 mg/m³ respirable fraction ACGIH:

TLV: 10mg/m³ total dust; 3 mg/m³ respirable fraction

8.2 General Measures for Protection and Hygienic: Don't eat, drink or smoke while working.

8.3 Respiratory Protection: Use NIOSH-approved respirator if exposure to dust in concentrations exceeding PEL's or TLV's is possible.

8.4 Hand Protection: Wash thoroughly after handling.

8.5 Body Protection: Wear light protecting clothes.

9. Physical and Chemical Properties

9.1 Characteristics

9.1.1 Physical State:	Solid
9.1.2 Color:	Grey
9.1.3 Odor:	Not characteristic
9.1.4 Density @20°C:	3.3 g/cm ³
9.1.5 Solubility:	Practically insoluble in water
9.1.6 pH @20°C	8.5

10. Stability and Reactivity

10.1 Substances to be avoided: See Section 7.2.1

10.2 Chemical Stability: the product is stable under normal ambient temperature and pressure

10.3 Hazardous Decomposition Products:

At temperature > 300°C depending on reaction conditions in changing composition: CO, H, phenol-aromatic and aliphatic hydro-carbonic.

10.4 Possibility of Hazardous Reactions: None expected.

11. Information on Toxicity

11.1 component carcinogenicity:

Aluminum oxide (1344-28-1)

ACGIH: A4 – Not Classifiable as a Human Carcinogen

Para- Aramid fibrils (24938-64-5)

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ACGIH: Monograph 68, 1997(Group 3 (not classifiable))

11.2 Acute toxicity:

Steel fiber (7439-89-6)

Oral LD50 Rat: 30gm/kg

12. Ecological Effects

Eco toxicological Information:

Aquatic toxicity (Acute): No hazard

Terrestrial Toxicity: No hazard

Chemical Fate Information: not available

12.2 Biodegradability: Not available

13. Disposal Considerations

13.1 Waste disposal: Disposal should be in accordance with applicable regional national and local laws and regulations. Local regulations may be more stringent than regional or national requirements

13.2. Recommendation: Recover or recycle if possible.

14. Transport/Regulations

Non – regulated by DOT, TDGR, ICAO/IATA, and IMDG.

15. Regulations

15.1 Inventory status:

United States (TSCA): para-Aramid fibrils (24938-64-5) is not on the TSCA listing, all other ingredients are on the inventory or exempt from listing

Canada: Feldspar (68476-25-5) , para-Aramid fibrils (24938-64-5) is not on the DSL listing or NDSL listing, Cashew dust (68602-89-1) is on the NDSL listing , And all other ingredients are on the DSL inventory or exempt from listing .

15.2 Other regulations, limitations and prohibitions:

SARA Title Rules

Sections 311/312 Hazard Classes

Fire hazard: no hazard

Reactive hazard: no hazard

Release of pressure: no hazard

Acute Health Hazard: no hazard

Chronic Health Hazard: no hazard

16. Other information

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Information presented herein has been compiled from information provided to us by our suppliers and other sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or the use of any product in violation of any patent or in violation of any law or regulation. It is the users' responsibility to determine the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary. We make no warranty as to the results to be obtained in using any material and, since conditions are not under the control, we must necessarily disclaim all liability with respect to the use of any material supplied by us.