

Material Safety Data Sheet

Section I

Product Name

SEMI-METALLIC DISC BRAKE MATERIALS (MORSE ST FF)

Manufacturer

**Morse Automotive, Inc.
4130 S. Morgan St.
Chicago, IL 60609**

Emergency Telephone Number
773-843-9000

Telephone Number for Information
773-843-9000

Date of Preparation: March 9, 1992
Date of Issue: July 29, 1999

Section II - Hazardous Ingredients/Identity Information

Hazardous Components

(Specific Chemical Identity: Common Names(s))

%

OSHA PEL

ACGIH TLV

Notes

Binder System Component (cured) may contain:

| | | | | |
|--------------------------|---|-------------|------------|------------------|
| Cashew Plant Derivatives | * | none | none | skin irritant |
| Isopropanol | * | 400 ppm | 400 ppm | -- |
| Phenolic resin system | | | | |
| - Phenol | * | 5 ppm | 5 ppm | skin notation |
| - Formaldehyde | * | 0.75 ppm | 0.3 ppm(A) | primary irritant |
| - Ammonia | * | 50 ppm | 25 ppm | primary irritant |
| - Calcium Hydroxide | * | 15 mg/m3(B) | 5 mg/m3 | -- |

Reinforcement and Filler Component

| | | | | |
|---|---|----------------------------------|--------------|-----------------|
| Nitrile Rubber | * | none | none | -- |
| Carbon black | * | 3.5 mg/m3 | 3.5 mg/m3 | total dust |
| Coal (less than 5% SiO ₂) | * | 2.4 mg/m3/(%SiO ₂ +2) | 2 mg/m3 | total dust |
| Coke | * | 15 mg/m3(B) | 10 mg/m3(B) | total dust(C) |
| Graphite | * | 15 mg/m3 | 2 mg/m3 | respirable dust |
| Metals and their oxides and/or sulfides (Iron, Zinc, Aluminum, Barium, Magnesium, Steel, Calcium) | * | 5 - 15 mg/m3 | 5 - 10 mg/m3 | total dust |
| Other Fibers | * | none | none | -- |

* The exact percentage of ingredients in this product is proprietary information. Only components which may be health hazards as defined in 29 CFR 1910.1200 are listed above. Information necessary for emergency health or health hazard investigations will be released to medical or health and safety personnel under signed confidentiality agreements.

(A) The ACGIH lists formaldehyde as a suspect human carcinogen

(B) As particulates not otherwise regulated

(C) Respirable dust exposure limits for these components are 5 mg/m³

Section III - Physical/Chemical Characteristics

| | | | |
|-----------------------------|-----------|------------------------------------|------------|
| Boiling Point/Melting Point | N/A | Specific Gravity (Water=1) | 2.5 to 3.5 |
| Vapor Pressure (mmHg) | Very low | Vapor Density (Air=1) | N/A |
| Solubility in Water | Insoluble | Evaporation Rate (Butyl Acetate=1) | N/A |

NFP Chemical Hazard Rating Health=1 (slight) Fire=1 (slight) Reactivity=1 (slight)

Appearance and Odor
Dark gray solid. No odor.

Section IV - Fire and Explosion Hazard Data

| | | | | | | | |
|---------------------------|-----|--------------|-----|-----|-----|-----|-----|
| Flash Point (Method Used) | N/A | Flammability | N/A | LEL | N/A | UEL | N/A |
|---------------------------|-----|--------------|-----|-----|-----|-----|-----|

Extinguishing Media
ABC Dry Chemical as appropriate for surrounding fire.

Unusual Fire & Explosion Hazards
This material may produce irritating smoke in smoldering fire.

Special Fire Fighting Procedures
Suggested respiratory protection: positive pressure, self-contained breathing apparatus approved by NIOSH/MSHA.

Section V - Reactivity Data

| | | |
|-----------|-----------------|---|
| Stability | Unstable N/A | Conditions to Avoid No known hazard during normal industrial use. Avoid temperatures greater than 800 °F. |
| | Stable YES | |

Incompatibility (Materials to Avoid)
Strong acids and other oxidizing agents.

Hazardous Decomposition or Byproducts
Normal combustion products: carbon monoxide, carbon dioxide, and soot.
Product specific combustion products: ammonia, oxides of nitrogen, phenols, and aldehydes.

| | | |
|--------------------------|----------------|----------------------------|
| Hazardous Polymerization | Will Not Occur | Conditions to Avoid N/A |
|--------------------------|----------------|----------------------------|

Section VI - Health Hazard Data

| | | | |
|--------------------|--------------------|--------------|------------------------|
| Route(s) of Entry: | Inhalation? YES | Skin? YES | Ingestion? UNLIKELY |
|--------------------|--------------------|--------------|------------------------|

Health Hazards (Acute & Chronic)
Skin contact with product may cause an allergic skin reaction similar to poison ivy in sensitive individuals. Prolonged or repeated skin contact may cause irritation.

| | | | |
|-----------------|------------|------------------------|-----------------------|
| Carcinogenicity | NTP? NO | IARC Monographs? NO | OSHA Regulated? NO |
|-----------------|------------|------------------------|-----------------------|

Signs & Symptoms of Exposure
None during normal industrial use.

Medical Conditions Generally Aggravated by Exposure
None during normal industrial use. Persons with pre-existing skin disorders may be more susceptible to irritation from skin contact.

Emergency & First Aid Procedures

Eye Contact - Immediately flush eyes with water for 15 minutes. If irritation persists, consult a physician.
 Skin Contact - In case of irritation, wash with soap and water. Treat as for poison ivy.
 Inhalation - In case of irritation, remove to fresh air.
 Ingestion - No known hazard during normal industrial use. If dust is ingested, drink fluids to remove.

Section VII - Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled
Material is a solid. Sweep (scoop) up and remove to a chemical disposal area.

Waste Disposal Method
Dispose according to applicable federal, state and local regulations.

Precautions to be Taken in Handling & Storing
Segregate stored material from oils and strong oxidizing agents. Keep away from electrical discharges, welding, open flames, extreme heat, and other sources of potential ignition. During transportation, do not expose to extremely hot temperatures.

Other Precautions
No special DOT classification.

Section VIII - Control Measures

Respiratory Protection (Specify Type)
None required during normal industrial use. Respiratory protection suitable for the measured nuisance dust level encountered is recommended during dry grinding. Minimally, a NIOSH approved dust mask should be worn during dry grinding.

| | | |
|-------------|--|---|
| Ventilation | Local Exhaust None during normal industrial use. Recommended during dry grinding. | Special None during normal industrial use. |
| | Mechanical (General) None during normal industrial use. May be required during dry grinding. | Other None during normal industrial use. |

Protective Gloves
Wear impervious gloves to prevent repeated or prolonged skin contact.

Eye Protection
None during normal industrial use. Goggles or safety glasses with side shields are recommended during dry grinding.

Other Protective Clothing or Equipment
As necessary to prevent prolonged skin contact.

Work/Hygienic Practices

Standard hygienic practices during normal industrial use. Wash skin with soap and water.

Section IX - SARA Title III Information

This product may contain phenol, formaldehyde, and ammonia, and may therefore be subject to the reporting requirements of Section 313, Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372 if present or used in sufficient quantities.

Section X - California (Proposition 65) Information

This product, as sold, is not believed to contain any chemical known to the state of California to cause cancer, birth defects, or other reproductive "harm".

Prepared by: Millard P. Griffin, Jr., CIH, Clayton Environmental Consultants, Inc.

For: Tenneco Automotive Brake

Date: March 9, 1992

Revised by: Millard P. Griffin, Jr, CIH, CSP, Clayton Environmental Consultants, Inc.

For: Tenneco Automotive Brake

Date: September 23, 1994

Revised by: D. R. Carter, BrakePro, Inc. (Changed names, area code, address, and material names only)

For: BrakePro, Inc.

Date: April 23, 1996

Revised by: Brian Kirts, Morse Automotive, Inc. (Update ingredients)

For: Morse Automotive, Inc.

Date: July 29, 1999

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