



MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: TH4001, TH1001-49

Product No.: 246

Manufacturer Name:

Federal Mogul World Headquarters
26555 Northwestern Highway
Southfield, Michigan 48033

Emergency Telephone:

24hr EP (INFOTRAC): 1-800-535-5053
International: (001) 352-323-3500

Non-emergency Telephone:

1-248-354-9844

Intended Use: Brake Pads

Contact Person: MSDS Request (voicemail) 1-248-354-9844

2 HAZARDS IDENTIFICATION

Emergency Overview

Physical State: Solid

Color: Gray-brown

Odor: Resin

Although several of the ingredients used to formulate this product may be hazardous in the raw state, the manufacturing process results in a solid infusible form, binding and otherwise, rendering the product inert. The ingredients may be released from the product by operations such as overheating, burning, machining, abrading, or riveting. **WARNING!** Causes skin, eye and respiratory tract irritation.

Potential Health Effects

Inhalation: The ingredients may be released from the product by operations such as overheating, burning, machining, abrading, or riveting. Causes respiratory tract irritation.

Eye Contact: The ingredients may be released from the product by operations such as overheating, burning, machining, abrading, or riveting. Causes eye irritation. Exposed individuals may experience eye tearing, redness, and discomfort.

Skin Contact: The ingredients may be released from the product by operations such as overheating, burning, machining, abrading, or riveting. Causes skin irritation.

Ingestion: Not relevant, due to the form of the product.

Chronic Health Effects: The ingredients may be released from the product by operations such as

overheating, burning, machining, abrading, or riveting.

Target Organ(s): | Respiratory system | Eye | Lung | Skin |

OSHA Regulatory Status: This product is hazardous according to OSHA 29CFR 1910.1200.

3 COMPOSITION / INFORMATION ON INGREDIENTS

General Information: The ingredients may be released from the product by operations such as overheating, burning, machining, abrading, or riveting.

Chemical Name	CAS-No.	Concentration*
†Magnesium oxide	1309-48-4	> 0.01%
†Mullite	1302-93-8	> 0.01%
†Cellulose	9004-34-6	> 0.01%
†Barium sulphate	7727-43-7	> 1%
†Graphite	7782-42-5	> 1%
†Phenol, polymer with formaldehyde	9003-35-4	> 1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

† This chemical is hazardous according to OSHA criteria.

4 FIRST AID MEASURES

Inhalation: Move to fresh air. Get medical attention if any discomfort continues.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention.

Ingestion: Get medical attention if any discomfort occurs.

5 FIRE-FIGHTING MEASURES

Extinguishing Media: Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable Extinguishing Media: Not applicable.

Special Fire Fighting Procedures: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Unusual Fire & Explosion Hazards: None known.

Hazardous Combustion Products: Carbon Oxides, Metallic fumes, Nitrogen Oxides

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid generation and spreading of dust. Avoid contact with spilled material.

Wear appropriate personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.

Spill Cleanup Methods: Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into closed container.

Environmental Precautions: Collect and dispose of spillage as indicated in section 13 of the MSDS. Avoid discharge into drains, water courses or onto the ground.

7 HANDLING AND STORAGE

Handling: The ingredients may be released from the product by operations such as overheating, burning, machining, abrading, or riveting. Avoid dust formation. Provide adequate ventilation. Provide easy access to water supply and eye wash facilities.

Storage: Store in a cool, dry place. Store in tightly closed original container. Avoid conditions which create dust. Store away from incompatible materials.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	Source	Type	Exposure Limits	Notes
Barium sulphate	US. ACGIH	TWA	10 mg/m ³	
Barium sulphate (Respirable fraction.)	US. OSHA Z-1	TWA	5 mg/m ³	
Cellulose	US. ACGIH	TWA	10 mg/m ³	
Cellulose (Respirable fraction.)	US. OSHA Z-1	TWA	5 mg/m ³	
Graphite (Respirable fraction.)	US. ACGIH	TWA	2 mg/m ³	
Graphite	US. NIOSH Guide	IDLH	1250 mg/m ³	
Graphite (Respirable fraction.)	US. OSHA Z-1	TWA	5 mg/m ³	
Graphite	US. OSHA Z-3	TWA	15 Mppcf	
Magnesium oxide (Inhalable fraction.)	US. ACGIH	TWA	10 mg/m ³	
Magnesium oxide	US. NIOSH Guide	IDLH	750 mg/m ³	
Magnesium oxide (Total particulate.)	US. OSHA Z-1	TWA	15 mg/m ³	
Mullite (Total dust.)	US. OSHA Z-1	TWA	15 mg/m ³	as Kaolin
Mullite (Respirable fraction.)	US. OSHA Z-1	TWA	5 mg/m ³	as Kaolin

Engineering Controls: If enclosed handling cannot be guaranteed, ventilation and protective clothing must be used. Adequate ventilation should be provided so that exposure limits are not exceeded. The risk of inhalation of dust must be minimized as much as possible. An eye wash and safety shower must be available in the immediate work area. This product may be capable of generating 0.1 ppm or greater formaldehyde vapors under certain use conditions. According to OSHA 29 CFR 1910.1048, formaldehyde vapors may be considered hazardous if workplace airborne concentrations exceed 0.1 ppm.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America,

if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Eye Protection: Wear safety glasses with side shields (or goggles).

Hand Protection: Wear chemical-resistant gloves. Contact glove manufacturer for specific information. Nitrile gloves are recommended.

Skin Protection: Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental Exposure Controls: Environmental manager must be informed of all major spillages.

9	PHYSICAL AND CHEMICAL PROPERTIES
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Color: Gray-brown

Odor: Resin

Odor Threshold: No data available.

Physical State: Solid

pH: No data available

Melting Point: No data available.

Freezing Point: Not applicable.

Boiling Point: No data available.

Flash Point: No data available.

Evaporation Rate: No data available.

Flammability (Solid): No data available.

Flammability Limit - Upper (%): No data available.

Flammability Limit - Lower (%): No data available.

Vapor Pressure: No data available.

Vapor Density (Air=1): No data available.

Specific Gravity: 2 - 3

Solubility in Water: No data available.

Solubility (Other): No data available.

Partition Coefficient (n-Octanol/water): No data available.

Autoignition Temperature: No data available.

Decomposition Temperature: No data available.

Viscosity: Not applicable.

10	STABILITY AND REACTIVITY
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Stability: This product is stable under expected conditions of use.

Conditions to Avoid: None known.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products:

At Elevated Temperatures:	Formaldehyde, Metallic fumes, Nitrogen Oxides
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Possibility of Hazardous Reactions: No data available.

11	TOXICOLOGICAL INFORMATION
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Specified Substance(s)**Acute Toxicity:**

Chemical Name	Test Results
Phenol, polymer with formaldehyde	Oral LD50 (Rat): 5 g/kg

Listed Carcinogens:

Chemical Name	IARC	NTP	OSHA	ACGIH
Barium sulphate	Not Listed	Not Listed	Not Listed	A4
Magnesium oxide	Not Listed	Not Listed	Not Listed	A4

IARC: 1 = Carcinogenic to Humans; 2A = Probably Carcinogenic to Humans; 2B = Possibly Carcinogenic to Humans; 3 = Not classifiable as to carcinogenicity to humans; 4 = Probably not carcinogenic to humans; Not listed = Not evaluated by IARC.

ACGIH: A1 = Confirmed Human Carcinogen; A2 = Suspected Human Carcinogen; A3 = Confirmed Animal Carcinogen; A4 = Not classifiable as a human carcinogen; A5 = Not suspected to be a human carcinogen; Not listed = Not evaluated by ACGIH.

Product Information

Acute Toxicity: The ingredients may be released from the product by operations such as overheating, burning, machining, abrading, or riveting. Dusts may irritate the respiratory tract, skin and eyes.

Chronic Toxicity: The ingredients may be released from the product by operations such as overheating, burning, machining, abrading, or riveting. May cause lung damage based on animal data.

12	ECOLOGICAL INFORMATION
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Ecotoxicity: No data available.**Mobility:** No data available.**Persistence and Degradability:** No data available.**Bioaccumulation Potential:** No data available.

13	DISPOSAL CONSIDERATIONS
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General Information: Dispose of waste and residues in accordance with local authority requirements.**Disposal Methods:** Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.**Container:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

14	TRANSPORT INFORMATION
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DOT Not regulated.

TDG Not regulated.

IATA Not regulated.

IMDG Not regulated.

15	REGULATORY INFORMATION
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Inventory Status: All ingredients are either listed or exempt from listing on TSCA.

US Regulations

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Name	RQ
Barium sulphate	1000 lbs

SARA Title III

Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A): Not regulated.

Section 311/312 (40 CFR 370):

☒ Acute (Immediate) ☐ Chronic (Delayed) ☐ Fire ☐ Reactive ☐ Pressure Generating

Section 313 Toxic Release Inventory (40 CFR 372): Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

Not regulated.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): Not regulated.

Drug Enforcement Act: Not regulated.

TSCA

TSCA Section 4(a) Final Test Rules & Testing Consent Orders: Not regulated.

TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Subpt. E): Not regulated.

TSCA Section 5(e) PMN-Substance Consent Orders: Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated.

State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): Not regulated.

Massachusetts Right-To-Know List: Barium sulphate; Cellulose; Graphite; Magnesium oxide

Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)): Not regulated.

Minnesota Hazardous Substances List: Barium sulphate; Cellulose; Graphite; Magnesium oxide

New Jersey Right-To-Know List: Barium sulphate; Magnesium oxide

Pennsylvania Right-To-Know List: Barium sulphate; Cellulose; Graphite; Magnesium oxide

Rhode Island Right-To-Know List: Cellulose; Graphite; Magnesium oxide

16 OTHER INFORMATION

HAZARD RATINGS

	Health Hazard	Fire Hazard	Instability	Special Hazard
NFPA	2	1	0	--

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards

	Health Hazard	Flammability	Physical Hazard	Personal Protection
HMIS	2	1	0	J

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Personal Protection codes: J - Goggles, Gloves, Apron, Dust, Vapor Respirator

HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special

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Disclaimer: The information provided on this data sheet was abstracted from supplier material safety data sheets and standard references in occupational health and toxicology. Federal-Mogul makes no representation or warranty with respect to the information obtained from such references. The information is however, as of the date provided, true and accurate to the best of Federal-Mogul's knowledge, and should be used to make an independent determination of the methods to safeguard workers and the environment.