



## ➤ MATERIAL SAFETY DATA SHEET

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Friction Materials,

Manufacturer:

MSDS Number: No. 220

Federal-Mogul Corporation  
26555 Northwestern Highway  
Southfield, MI 48034FM 2243S, Fer/FM 3476F, Fer/FM 4020, Fer/FM 4088/2,  
Fer/FM 4088/2I, Fer/FM 4088/2L, Fer/FM 4088/2F,  
Fer/FM 4164/1, Fer/FM 4176, Fer/FM 4176/1, Fer/FM 4176/2,  
Fer 4181, Fer/FM4188, Fer 4200, Fer/FM 4212, Fer/FM 4240,  
Fer 4364, Fer 4550, Fer 4576, Fer 4577, Fer 4578, HP1000/1,  
MX 4129, MX 4200, TN0043, TN0184, TN0270, 1143-301,  
1143-320M, 1478-12, 1478-69,

Phone: (248) 354-9844

Emergency Phone: 1-800-567-7455 24-Hr

### SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

All the ingredients, for all the formulations listed in Section 1, are listed below.

However, not all the ingredients listed, are found in each of the formulations.

Some of the ingredients used to formulate these products may be hazardous in the raw state, or may contain hazardous impurities. Manufacturing results in a solid, infusible form, binding and otherwise, rendering the mixture inert. We have identified all the constituents below present in quantities greater than 0.1%, that may be released from the product by overheating, burning, machining or abrasion. Details on hazardous impurities less than 0.1%, but greater than 0.01% and SARA reportable ingredients appear in section 15

<u>Ingredient*</u>	<u>CAS No.:</u>	<u>% Weight</u>	<u>OSHA PEL</u>	<u>ACGIH TLV (2006)</u>
Acrylic Fibers (P.A.N., >9 microns dia.)	25014-41-9, 24980-62-9	>0.1	None Established	1 fiber/cc (note A)
Alumina silicate	1335-30-4	>1	None Established	None Established)
Aluminum oxide (non fibrous)	1344-28-1	>1	15 mg/m <sup>3</sup> (note B)	10 mg/m <sup>3</sup>
Amorphous Silica	7631-86-9	>0.1	None Established	None Established)
Aramid Fiber (> 9 microns dia.)	26125-61-1	>1	None Established	1 fiber/cc (note A)
Barytes (Barium sulfate)	7727-43-7	>1	15 mg/m <sup>3</sup> (note B)	10 mg/m <sup>3</sup>
Bismuth sulfide (in 4181, 4188, 4200 only)	1345-07-9	>1	None Established	None Established
Bronze or Brass Alloys (Note E)	12597-70-5	>1	None Established	None Established
Calcium carbonate	1317-65-3	>1	15 mg/ m <sup>3</sup> (note B)	10 mg/m <sup>3</sup>
Calcium oxide	1305-78-8	>1	5 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
Calcium fluoride	14542-23-5	>1	2.5 mg/ m <sup>3</sup> (note B)	2.5 mg/m <sup>3</sup>
Calcium hydroxide (Lime)	1305-62-0	>1	15 mg/ m <sup>3</sup> (note B)	5 mg/m <sup>3</sup>
Cashew particles	8007-24-7	>1	None Established	None Established
	68333-96-0			
	68583-07-3			
	68602-89-1			
Cashew Resins – Cured	68333-94-8	>1	None Established	None Established
Chlorobutyl Rubber	9010-85-9	>1	None Established	None Established
Copper (dust & fiber) (Note F & Section 15)	7440-50-8	>1	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Copper alloy (Note E)	7440-50-8	>1	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Copper Sulfide (in Fer 4200, MX4200, and 4188 only )	22205-45-4	<1	None Established	None Established
Glass Fiber (>9 microns dia.)	65997-17-3	>1	None Established	1 fiber/cc (note A) (A3)
Graphite (natural)	7782-42-5	>1	15 mppcf	2 mg/m <sup>3</sup> (respirable fraction)
Gilsonite	12002-43-6	>1	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Iron	7439-89-6	>1	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Iron chromite	1308-31-2	>1	None Established	None Established
Iron Oxide	1317-61-9	>1	None Established	None Established
Iron Sulfide	1317-37-9	>1	None Established	None Established
Kyanite	1302-76-7	> 0.1	None Established	None Established