MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: A-150 Series Bearings, Bushings, and Washers

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: Carbon Steel Backed Aluminum Bearings, Bushings, Solid Aluminum, Washers

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

2 HAZARDS IDENTIFICATION

Emergency Overview
Physical State: Solid
Color: No data available.
Odor: Slight odor

Low hazard for usual industrial or commercial handling by trained personnel.
Finished products are not hazardous to health. Grinding, cutting and wear may release metal scraps and dusts. Inhalation or ingestion of shavings or dusts may have adverse health effects.

Potential Health Effects

Inhalation: Grinding and sanding this product may generate dust. Dust may irritate the respiratory system.

Eye Contact: Dust in the eyes will cause irritation.

Skin Contact: Dust may irritate skin. Workers allergic to nickel may develop eczema or rashes.

Ingestion: Not relevant, due to the form of the product. However, ingestion of dusts generated during working operations may cause nausea and vomiting.

Chronic Health Effects: Repeated overexposure to manganese over time may adversely affect the male reproductive system and central nervous system. Contains nickel, which can cause lung or nasal cancer. Long-term breathing of this material may cause chronic lung disease. Workers allergic to nickel may develop eczema or rashes.

Target Organ(s): | Skin.

Potential Physical / Chemical Effects: This product is not flammable or combustible.

OSHA Regulatory Status: This product is not hazardous according to OSHA 29CFR 1910.1200.

Environment: No data available.

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*
†Aluminium	7429-90-5	< 97%
†Silicon	7440-21-3	< 15%
†Copper	7440-50-8	< 2%
Manganese	7439-96-5	< 1%
†Nickel	7440-02-0	< 1%
†Tin	7440-31-5	< 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/WHMIS criteria.

4 FIRST AID MEASURES

Inhalation: Not likely, due to the form of the product. In case of inhalation of dusts or fumes from heated product: Move to fresh air. Get medical attention if symptoms persist.

Eye Contact: Not likely, due to the form of the product. Contact with dust: Flush eyes thoroughly with water for at least 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention promptly if symptoms occur after washing.

Skin Contact: Wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Ingestion: Not likely, due to the form of the product. If ingestion occurs: Rinse mouth thoroughly. Get immediate medical attention.

5 FIRE-FIGHTING MEASURES

Extinguishing Media: Extinguish with alcohol-resistant foam, carbon dioxide or dry powder. Do not use water on molten metal.

Unsuitable Extinguishing Media: None.

Special Fire Fighting Procedures: Use standard firefighting procedures and consider the hazards of other involved materials.

Unusual Fire & Explosion Hazards: None known.

Hazardous Combustion Products: Metal oxides

Protective Measures: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid generation and spreading of dust. Wear appropriate personal protective equipment. For personal protection, see section 8 of the MSDS.

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

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

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

7 HANDLING AND STORAGE

Handling: Avoid dust formation. Do not eat, drink or smoke when using the product. Provide adequate ventilation. Observe good industrial hygiene practices.

Storage: Avoid conditions which create dust. Store away from incompatible materials.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	Source	Type	Exposure Limits	Notes
Aluminium (Respirable dust.)	US. OSHA Z-1 PEL	TWA	5 mg/m³	as Al
Copper (Fume.)	US. ACGIH TLV	TWA	0.2 mg/m³	
Copper	US. NIOSH Guide	IDLH	100 mg/m³	
Copper (Fume.)	US. OSHA Z-1 PEL	TWA	0.1 mg/m³	as Cu
Nickel (Inhalable fraction.)	US. ACGIH TLV	TWA	1.5 mg/m³	
Nickel	US. NIOSH Guide	IDLH	10 mg/m³	
Nickel	US. OSHA Z-1 PEL	TWA	1 mg/m³	as Ni
Silicon	US. ACGIH TLV	TWA	10 mg/m³	
Silicon (Total dust.)	US. OSHA Z-1 PEL	TWA	15 mg/m³	
Silicon (Respirable fraction.)	US. OSHA Z-1 PEL	TWA	5 mg/m³	
Tin	US. ACGIH TLV	TWA	2 mg/m³	
Tin	US. NIOSH Guide	IDLH	100 mg/m³	
Tin	US. OSHA Z-1 PEL	TWA	2 mg/m³	as Sn

Consult Canadian Provincial Regulations and/or Mexican Regulations on exposure limits, if applicable.

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.

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: High-efficiency particulate respirator.

Eye Protection: Risk of contact: Wear approved safety goggles.

Hand Protection: Risk of contact: Wear protective gloves.

Skin Protection: Risk of contact: Use skin protection.

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

Color: No data available.
Odor: Slight odor
Odor Threshold: Not applicable.
Physical State: Solid
pH: Not applicable
Melting Point: Not applicable.
Freezing Point: Not applicable.
Boiling Point: 1600°C (2912°F) - 1200°C (2192°F)
Flash Point: Not applicable.
Evaporation Rate: Not applicable.
Flammability Limit - Upper (%): Not applicable.
Flammability Limit - Lower (%): Not applicable.
Vapor Pressure: Not applicable.
Vapor Density (Air=1): No data available.
Specific Gravity: No data available.
Solubility in Water: Insoluble
Solubility (Other): Not applicable.
Partition Coefficient (n-Octanol/water): No data available.
Autoignition Temperature: Not applicable.
Decomposition Temperature: No data available.
Viscosity: Not applicable.
Percent Volatile: 0 %vol

10 STABILITY AND REACTIVITY

Stability: Material is stable under normal conditions.

Conditions to Avoid: Heat.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products:

At Elevated Temperatures:	Metallic fumes

Possibility of Hazardous Reactions: Will not occur.

11 TOXICOLOGICAL INFORMATION

Specified Substance(s)

Acute Toxicity:

Chemical Name	Test Results
Silicon	Oral LD50 (Rat): 3160 mg/kg

Listed Carcinogens:

Chemical Name	IARC	NTP	OSHA	ACGIH
Nickel	2B	Listed	Not Listed	A5

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:
Test Results
No test data available for the product.

Other Acute: Dusts may irritate the respiratory tract, skin and eyes.

Chronic Toxicity: Repeated overexposure to manganese over time may adversely affect the male reproductive system and central nervous system. Contains nickel, which can cause lung or nasal cancer. Long-term breathing of this material may cause chronic lung disease. Workers allergic to nickel may develop eczema or rashes.

12 ECOLOGICAL INFORMATION

Ecotoxicity: No data available.

Mobility: The product is insoluble in water and will sediment in water systems.

Persistence and Degradability: No data available.

Bioaccumulation Potential: No data available.

13 DISPOSAL CONSIDERATIONS

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

DOT Not regulated.

TDG Not regulated.

IATA Not regulated.

IMDG Not regulated.

15 REGULATORY INFORMATION

Canadian Controlled Products Regulations: This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

WHMIS Classification: This is not a WHMIS controlled product.

Mexican Dangerous Statement: This product is not dangerous according to Mexican regulations.

Inventory Status

This product or all components are listed or exempt from listing on the following inventory: TSCA, DSL

US Regulations

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Name	RQ
Nickel	100 lbs
Copper	5000 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):

Chemical Name	CAS-No.	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Nickel	7440-02-0	10000 lbs	25000 lbs
Aluminium	7429-90-5	10000 lbs	25000 lbs
Copper	7440-50-8	10000 lbs	25000 lbs

For reporting purposes: the De Minimis Concentration for a toxic chemical in a mixture is 0.1% for carcinogens as defined in 29 CFR 1910.1200(d)(4) or 1% for others.

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): Nickel

Massachusetts Right-To-Know List: Aluminium; Copper; Nickel

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

Minnesota Hazardous Substances List: Aluminium; Copper; Nickel

New Jersey Right-To-Know List: Aluminium; Copper; Nickel

Pennsylvania Right-To-Know List: Aluminium; Copper; Nickel

Rhode Island Right-To-Know List: Copper; Nickel

16 OTHER INFORMATION

HAZARD RATINGS

	Health Hazard	Fire Hazard	Instability	Special Hazard
NFPA	0	0	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	0	0	0	J

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special

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