

MATERIAL SAFETY DATA SHEET

According to ISO 11014-1

MSDS NA27-AF/700

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SECTION 01 - PRODUCT AND COMPANY IDENTIFICATION

IDENTITY: Brake Lining - NA27-AF/700

Chemical Family Name: Non Asbestos Friction Material

Use for the product: In brake application

Manufacturer's Name: FRAS-LE S.A

Address: RS 122 - Km 66 - nº 10945 - Bairro Forqueta - Caxias do Sul - 95010.550 - RS - Brasil

Telephone Number for Information: (54) 3289-1000 - Fax (54) 3289-2021.

SECTION 02 – INGREDIENTS AND HAZARDOUS

Hazardous Components ACGIH –TLV/ **NOHSC**- TWA *

Inorganic Fiber 1f/cm³

Metallic Fiber NA

Organic Fiber 10 mg/m³

Coke, Graphite 2 mg/m³

Rubber

Phenolic Resin 5 ppm

Metallic Oxides 10 mg/m³

Non Fibrous Silicate Filler 2 mg/m³

Other Fillers 10 mg/m³

Note: This is an asbestos free product.

SECTION 03 – HAZARDS IDENTIFICATION

Route(s) of Entry: Inhalation: yes Skin: yes Ingestion: no

Health Hazards (Acute and Chronic):

Some persons may be sensitive to phenolic resins and develop dermatitis-type problems. Overexposure of dust of silica, graphite, and coke can produce pneumoconiosis and lung damage.

SECTION 04 – FIRST-AID MEASURES

Emergency and First Aid Procedures:

Should not be necessary from reasonable handling of this product.

SECTION 05 – FIRE-FIGHTING MEASURES

Flash Point: NA

Flammable Limits: NA

Extinguishing Media: water fog, CO2 foam as appropriate for surrounding materials.

Special Fire Fighting Producers:

Positive pressure self-contained breathing apparatus should be used. Personnel not having suitable respiratory protection should leave the area to prevent significant exposure to toxic combustion gases from any source.

SECTION 06 - ACCIDENTAL RELEASE MEASURES

Spill and leak procedures: NA

SECTION 07 – HANDLING AND STORAGE

Precautions to be taken in handling and storage:

Sparks may be produced under some grinding conditions. Grinding, drilling, milling, can result in the release of

airborne dust. Use vacuum to avoid dust dispersal.

Storage in dry place.

SECTION 08 – EXPOSURE CONTROLS/ PERSONAL PROTECTION

Respiratory protection Appropriate mask for persons

Ventilation Local exhaust for dust exposures exceeding TLV

Mechanical: not recommended for dust exposures

Protective gloves Recommended for persons with skin sensitive to phenolic resins.

Other: barrier creams for persons with skin sensitive to phenolic resins and

glass fiber.

Eye protection Should not be needed for normal handling of product. Eye protection is a

good practice where dust is propelled by grinding or drilling actives.

Other protective clothing or

Equipment

Long sleeve shirts or other protective clothing may be beneficial to prevent

skin contact of person sensitive to phenolic resins and glass fiber.

SECTION 09 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point NA

Vapor Pressure NA

Vapor Density NA

Solubility in Water None

Melting Point NA

Evaporation Rate 0

Specific Gravity $1,86 - 1,96 \text{ g/cm}^3$

Appearance and Odor Grey color and characteristic odor

Physical State Solid

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable Conditions to avoid: NK

Incompatibility (material to avoid): NK

Hazards polymerization: will not occur Condition to avoid: NK

Hazardous Decomposition Products: incomplete combustion will create carbon monoxide and dioxide

SECTION 13 – DISPOSAL CONSIDERATION

Waste Disposal:

Scrap pieces should be disposed of in a way to prevent airborne dust.

Wastes should be placed in sealed container marked with appropriate warning label.

Check local, state and federal regulations.

SECTION 14 – TRANSPORT INFORMATION

Shipping name: Non – regulated material according to 49 CRF 172. 101 part 171

Hazard Class: Not sublet to DOT Hazardous Material Registry.

SECTION 16 – OTHER INFORMATION

Maintain good housekeeping practices.

Employees should be properly instructed of control measures as indicated above when there is a need for it.

The amount of dust produced should be controlled, being necessary the use of vacuum cleaning.

* This product is Non- Hazardous according to health and safety standards, as follows:

ACGIH TLV-TWA - American Conference of Governmental Industrial Hygienists - 2000 Edition

NOHSC - TWA – National Occupational Health and Safety Commission

NA – Not Available

NK - Not Known

Prepared: Raw material Quality Analyst Approved: Research and Development Manager