

## MATERIAL SAFETY DATA SHEET

Resco Products, Inc.  
Penn Center West  
Building 2, Suite 430  
Pittsburgh, PA 15276  
Emergency Telephone No. : 412-494-4491

Prepared By: Research & Development  
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### *Section 1 - Product Name*

**Material Name:** Resin Bonded Magnesia-Carbon Brick (With Pitch-Impregnated)  
**Intended Use:** Refractory Material  
**Product Name:** Nuline 39-89  
**Brand Code:** MIX51-87 with TI

### *Section 2 - Composition And Information On Ingredients*

<b>Ingredient</b>	<b>CAS No.</b>	<b>% Weight</b>	<b>OSHA PEL</b>	<b>ACGIH TLV</b>	<b>SEC 313</b>
Magnesium Oxide	1309-48-4	60-100	15 mg/m <sup>3</sup> Total Particulate	10 mg/m <sup>3</sup> Inhalable	No
Graphite	7782-42-5	10-30	15 mppcf (2)	2 mg/m <sup>3</sup> Respirable	No
Phenolic Resin	--	1-5	Not Established	Not Established	No
Petroleum Pitch	8052-42-4	1-5	0.2 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup> Inhalable	No

**Notes:** (1) The PEL and TLV values shown above are 8-hour time-weighted averages, unless otherwise specified. "Not Established" means that no PEL or TLV has been assigned. (2) Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.

### *Section 3 - Hazards Identification*

**EMERGENCY OVERVIEW:** No unusual fire or spill hazard. Dusts may be irritating to skin, eyes and mucous membranes.

**Primary Route(s) of Entry for Particulate:** Note that eye and inhalation factors would be for sawing or tear out.

**Eye:** Yes    **Skin:** Yes    **Inhalation:** Yes    **Ingestion:** No

**Potential Adverse Health Effects:**

<b>Acute:</b>	Eye: Dusts of this product may be irritating.
	Skin: Dusts of this product may cause skin irritation.
	Inhalation: Dusts of this product may be irritating to respiratory tract.
<b>Chronic:</b>	Eye: Dusts of this product may cause reddening or swelling of the eye.
	Skin: Dusts of this product may cause a skin rash (dermatitis).
	Inhalation: Prolonged or repeated inhalation of dust of this product may result in increased lung cancer.

**Carcinogenicity:** This product contains petroleum pitch and petroleum pitch has constituents for which there is evidence of carcinogenicity to humans. Also see Section 11 for additional information.

**Signs and Symptoms of Overexposure:** Skin rash can result from handling. Coughing can result from overexposure to dust.

**Medical Conditions Generally Aggravated by Exposure to Particles:** Pre-existing diseases or other conditions of the lungs, skin, eyes, and mucous membranes.

### *Section 4 - First Aid Measures*

**Eye Contact:** Flush product from eyes using large amounts of water, if irritation continues, seek medical attention.

**Skin Contact:** Wash product from skin using soap and water, if irritation continues, seek medical attention.

**Inhalation:** If exposed to excessive levels of dusts or vapors during heating, remove victim to fresh air. Seek medical attention if coughing or other symptoms persist.

**Ingestion:** As shipped, product not likely to be ingested; but if it occurs, do not induce vomiting. Seek medical attention.

### *Section 5 - Fire Fighting Measures*

**Flash Point:** Not Applicable

**Flammable Limits:** Not Applicable

**LEL:** Not Applicable

**UEL:** Not Applicable

**Autoignition Temperature:** Not Applicable

**General Hazard:** Product will not burn, but does contain small quantities of chemicals which can generate toxic and/or irritating vapors when initially heated.

**Extinguishing Media:** As appropriate for surrounding fire.

**Fire Fighting Instructions:** As appropriate for surrounding fire.

**Fire Fighting Equipment:** Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus (SCBA) and full protective clothing (bunker gear) when fighting fires.

**Hazardous Combustion Products:** Product will not burn, but may generate hazardous combustion products (such as carbon monoxide or vapors of the constituents shown in Section 2) when subjected to fire conditions.

**Product Name: Nuline 39-89**

**Date: 05/25/11**

**Flame Propagation or Burning Rate of Solid Material:** Not Applicable

**Flammability Classification (As defined by 29 CFR 1910.1200):** Not Flammable

**Section 6 - Accidental Release Measures**

For brick products, spills are remedied by recovering and re-stacking the shapes. If dusts are generated during the spill, these should be collected by gently sweeping the material into a dust pan or collecting with a vacuum device. All personnel engaged in cleanup operations should adhere to the instructions outlined in Section 8 for personal protection. Disposal of wastes from cleanup operations should be carried out in accordance with the guidelines outlined in Section 13.

**Section 7 - Handling And Storage**

**Handling:** Avoid direct contact with product or dusts from product by wearing protective clothing, using approved respiratory protection, and wearing gloves of the impermeable type.

**Storage:** The product should be stored in a dry location and away from sources of heat (furnaces, boilers, incinerators, etc.). Pallet protection such as shrink-wrap or stretch-wrap should be kept in place until the product is required for installation.

**Section 8 - Exposure Control/Personal Protection**

**Engineering Controls:** Process enclosures, local exhaust ventilation, or other engineering process controls may be necessary to keep any air contaminants associated with this product within their TLV's. This is particularly true if user operation generates dust, vapor, or mist.

**Respiratory Protection:** Since this product is a proprietary mixture of unique ingredients, it does not have an established limit for airborne concentration (PEL or TLV), which workers can routinely be exposed to without suffering adverse health effects. This MSDS is prepared to alert customers and other users to the various components of the product and their relative quantity and toxicity in the product as it is provided. The user must review his/her own circumstances and then determine what is required to establish a respiratory protection program that meets OSHA 1910.134 requirements. If workplace conditions warrant respiratory protection, use MSHA/NIOSH approved units as listed in the current 29 CFR 1910.134 for the existing conditions. Some type of respiratory protection is recommended for even the best conditions. Actual respirator selection should be made after consultation with a competent health and safety professional.

**Eye Protection:** Industrial-type safety glasses offer some protection, goggles offer more.

**Protective Gloves:** As needed to prevent direct skin contact.

**Other Protective Clothing or Equipment:** Wear clothing designed to limit direct exposure to product or dusts, vapors, or mists associated with product. If clothing becomes contaminated, it should be laundered before wearing again. Steel toe boots are recommended for brick products. Maintain good personal hygiene. Wash hands thoroughly before eating or drinking.

**Section 9 - Physical And Chemical Properties**

<b>Appearance:</b> Brick/Shapes Black Color	<b>Vapor Pressure:</b> Not Applicable
<b>Odor:</b> Slight Pitch Odor	<b>Vapor Density:</b> Not Applicable
<b>Water Solubility:</b> Insoluble	<b>pH:</b> Not Determined
<b>Density (H<sub>2</sub>O = 1):</b> 3.0	<b>Boiling Point:</b> Not Applicable
<b>% Volatile (By Weight):</b> <8% at 1800°F	<b>Melting Point:</b> Greater than 2500°F

**Section 10 - Stability And Reactivity**

**Chemical Stability:** This product is stable under normal conditions for shipping, storage and installation.

**Conditions to avoid:** None

**Incompatible Material:** May react with strong acids, such as hydrofluoric acid. Avoid contact between product and strong oxidizers.

**Hazardous Decomposition:** This product contains carbon, in some form, which may undergo incomplete combustion when heat is applied. This may result in the generation of toxic fumes or simple asphyxiants. Carbon monoxide could be produced under these circumstances.

**Hazardous Polymerization:** Not Applicable

**Section 11 - Toxicological Information**

As shown in Section 2, this product contains a phenolic resin. The phenolic resin contains less than 1% free phenol after curing, which is part of the manufacturing process. Curing is achieved by heating the product in the range 300-400 °F. This removes most of the volatile fraction of the resin. In addition to the free phenol, the cured resin contains a trace of formaldehyde (less than 0.1%).

This product contains a minor amount of carbon black (CAS# 1333-86-4). The International Agency for Research on Cancer (IARC) published the Monograph Volume 65-Printing Processes and Printing Inks, Carbon Black and some Nitro Compounds on 4/12/96. This document changed the carcinogenic rating for carbon black from Category 3 (insufficient evidence to make a determination) to Category 2B (known animal carcinogen, possible human carcinogen). Incomplete

**Product Name: Nuline 39-89**

**Date: 05/25/11**

combustion products: Both phenolic resin and the carbon black may undergo incomplete combustion when high heat is first applied to this product. Certain chemical compounds produced by incomplete combustion, in combination with poor air handling practices, may result in TLVs (threshold limit values) being exceeded for specific air contaminants.

	<b>LD<sub>50</sub></b>	<b>LC<sub>50</sub></b>
Magnesium Oxide	No Data	No Data
Graphite	12,600 mg/kg (oral rat)	No Data
Phenolic Resin	No Data	No Data
Petroleum Pitch	No Data	No Data
<b>Target Organs</b>		
Magnesium Oxide	Eyes and respiratory system.	
Graphite	Respiratory system and cardiovascular system	
Phenolic Resin	No Data	
Petroleum Pitch	Not Available	
<b>Long Term Toxicity</b>		
Magnesium Oxide	Not Available	
Graphite	Not Available	
Phenolic Resin	Not Available	
Petroleum Pitch	Not Available	
<b>Short Term Toxicity</b>		
Magnesium Oxide	Not Available	
Graphite	Irritant to eyes and mucous membranes	
Phenolic Resin	Not Available	
Petroleum Pitch	Not Available	

**Section 12 - Ecological Information**

**Accidental Release:** No information has been developed regarding the ecotoxicity or environmental fate of this product

**Section 13 - Disposal Considerations**

**Waste Disposal Method:** The as-manufactured refractory, or dust from this material, is not considered a hazardous waste as defined by 40 CFR 261. However, used product (and dusts generated during maintenance and tear-out operations) may be contaminated with other hazardous substances from the particular application (for example, metals). Therefore, appropriate waste analysis may be necessary to determine proper disposal. Waste characterization and disposal/treatment methods should be determined by a qualified environmental professional in accordance with applicable federal, state, and local regulations.

**Section 14 - Transport Information**

**DOT (Department of Transportation) Classification under 49 CFR 172.101:** Not Regulated

**UN (United Nations) Number:** Not Applicable

**NA (North American) Number:** Not Applicable

**Section 15 - Regulatory Information**

Resco Products, Inc. considers this product to be hazardous as defined by the OSHA Hazardous Communications Standard (29 CFR 1910. 1200). Section 2 chemicals, which must be addressed, and the summary of regulatory and other lists upon which they appear are:

<b>Ingredient</b>	<b>CAS NUMBER</b>	<b>LIST(S)</b>
Magnesium Oxide	1309-48-4	1, 2, 3, 4
Graphite	7782-42-5	1, 2, 3, 4
Phenolic Resin	--	
Petroleum Pitch	8052-42-4	4

**The lists are as follows:**

1. ACGIH TLV "Threshold Limit Values" (2010)
2. OSHA Air Contaminants - Permissible Exposure Limits
3. Canadian Domestic Substances List
4. EPA TSCA Chemical Inventory List

**WHMIS Hazard Class (Canada):** D-2A

**SARA TITLE III: Section 302 Extremely Hazardous Substances:** None

**Section 311/312 Hazardous Categories:** Irritant

**Section 16 - Other Information**

This information and recommendations set forth herein are taken from sources believed to be accurate as of the date herein; however, Resco Products, Inc. makes no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.