

MATERIAL SAFETY DATA SHEET

MSDS Number: mk-103

Manufacture: IBIDEN CO.,LTD.

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SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS - Chemical Name & Common Names (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	%	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED
Artificial Graphite (wt.%)	> 99.9			
Ash (wt.%)	< 0.1			
(CAS No.: 7782-42-5)				
Non-Hazardous Ingredients				
TOTAL	100			

SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

Melting Point	3,700 deg.C	Specific Gravity (H2O = 1)	1.70 ~ 1.95
Vapor Pressure (mm Hg and Temperature)	NO DATA	Boiling Point	NO DATA
Vapor Density (Air = 1)	NO DATA	Evaporation Rate	NO DATA
Solubility in Water	INSOLUBLE	Water Reactive	NO REACTION

Appearance and Odor Gray to Black, No Odor

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method Used	NO DATA	Auto-Ignition Temperature	NO DATA	Flammability Limits in Air% by Volume	NO DATA	LEL	NO DATA	UEL	NO DATA
Extinguisher Media	Water or common extinguisher								
Special Fire Fighting Procedures	Isolate damage area, keep unauthorized personnel out. Water spray may be useful in minimizing or dispersing vapors.								
Unusual Fire and Explosion Hazards	No unusual fire or explosion hazards are expected.								

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY ■ Stable □ Unstable	Conditions to Avoid High Temperature (above 400 deg.C) at Air
Incompatibility (Material to avoid)	Strong oxidizing agents
Hazardous Decomposition Products	Combustion can yield carbon dioxide and carbon monoxide.
HAZARDOUS POLYMERIZATION □ May Occur ■ Will not Occur	Conditions to Avoid

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY □ Inhalation □ Skin Absorption	□ Ingestion □ Not Hazardous	CARCINOGEN LISTED IN □ NTP □ IARC Monograph	□ OSHA ■ Not Listed
HEALTH HAZARDS	Acute	NO DATA	
	Chronic	Lung irritation due to deposition of dust particles in the lungs has been reported.	
Signs and Symptoms of Exposure	Coughing, shortness of breath and bronchitis.		
Medical Conditions Generally Aggravated by Exposure	Not Known		
EMERGENCY FIRST AID PROCEDURES - Seek medical assistance for further treatment, observation and support if necessary.			
Eye Contact	Do not rub the eyes. Wash the eyes with clean water.		
Skin Contact	Wash with water or soap and water.		
Inhalation	Gargle the throat and rinse the mouth well.		
Ingestion	Drink water a lot then try to vomit.		

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (Special Type)	Suitable filter-type		
Protective Gloves	Impermeable type	Eye Protection	Safety Glasses
VENTILATION TO BE USED	Local Exhaust Other (Specify)	Mechanical (General)	Special
Other Protective Clothing and Equipment	Safety Shoes		
Hygienic Work Practices			

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE / LEAK PROCEDURES

Steps to be Taken if Material is Spilled or Released	Isolate spill area and keep unauthorized personnel out. Minimize dust generation. Sweep up dust and package appropriately for disposal.
Waste Disposal Methods	Consult state and local regulations regarding the proper disposal of this material.
Precautions to be Taken in Handling and Storage	Wear appropriate protective equipment (See Section 6). In case of handling weighty material, use forklift or crane. Keep away from incompatible material.
Other Precautions and/or Special Hazards	Contact IBIDEN CO.,LTD.
NFPA Rating Health__ Flammability__ Reactivity__ Special__	HMIS Rating Health__ Flammability__ Reactivity__ Personal Protection__