

MATERIAL SAFETY DATA SHEET

1. MATERIAL IDENTIFICATION

Manufacturer's Name: Metallurgical Products Company
Address: 810 Lincoln Avenue
P.O. Box 598
West Chester, PA 19381-0598

Emergency Information: Gregg Kudlacik
610-696-6770 ext 120 (24 hr customer service hotline)

Product Name: 20% Phosphor nickel

Product Description: Ingot

Element	CAS Number	EC Number	Chemical Symbol
*Nickel	7440-02-0	231-111-4	Ni
*Phosphorus	7723-14-0	231-768-7	P

2. COMPOSITION & INFORMATION ON INGREDIENTS

Alloying Agent	Percentage	ACGIH 8 - hr TWA
Nickel	78% - 82%	1.5 mg/m ³ -Dust 1.0 mg/ m ³ - Fume
Phosphorous	18% - 20%	0.1 mg/ m ³
Zinc	< .20%	5.0 mg/ m ³
Tin	< .20%	2.0 mg/ m ³
Lead	< .20%	0.15 mg/ m ³
Nickel	< .20%	0.5 mg/ m ³
Aluminum	< .20%	10 mg/ m ³
Manganese	< .20%	1mg/ m ³ - Fume 5.0 mg/m ³ -Dust
Chromium	< .20%	0.5 mg/ m ³
Antimony	< .20%	0.5 mg/ m ³
Arsenic	< .20%	0.2 mg/ m ³
Iron	< .20%	5 mg/ m ³
Silicon	< .20%	10 mg/m ³ - Total Inhale able Dust 5 mg/ m ³ - Total Respirable Dust

The extent to which these substances are present in air depends upon the purchase specification and production methods which must be considered carefully by the user as part of the assessment of risk to health - see hazards.

3. HEALTH HAZARD DATA

Permissible Exposure Limits and Threshold Limit Values:	See Section 2.
Route(s) of Entry:	
Inhalation:	Yes
Skin:	Yes
Ingestion:	Yes

MSDS - 20%P Ni EU
Revision Number: 1
Revision Date: June7, 2010

Effects of Overexposure:

***Phosphorus**

Yellow phosphorus is toxic and may produce poisoning if taken by mouth. Chronic poisoning takes the form of general weakness, including anemia, loss of appetite, garlic-like odor of the breath, loosening of the teeth, severe pain, and swelling of the jaw.

***Nickel**

Exposure to metallic Nickel or concentrate dusts and particles may cause contact dermatitis or skin irritation in sensitive individuals following prolonged contact. Respiratory sensitization is possible in susceptible individuals. Particles could cause eye irritation arising from mechanical abrasion.

4. FIRST AID MEASURES	
Eye Contact:	Flush with copious amounts of water and seek medical attention.
Skin Contact:	Wash thoroughly with soap and water.
Inhalation:	Remove to fresh air. Get medical attention.
Ingestion:	Seek medical attention if large quantities of material have been ingested.

5. FIRE AND EXPLOSION HAZARD DATA			
Flash Point:	Not Applicable	Method Used:	Not Applicable
Flammable Limits:	Not Applicable	UEL	Not Applicable
Extinguishing Media:	See Below		

Special Fire Fighting Procedures: Solid, massive form is not combustible under normal conditions. Use fire fighting methods that are appropriate for surrounding fire. Do not use water on fire where molten metal is present. Use class D extinguishing agents or dry sand on fines. Dust clouds may be explosive. Prevent formation of a dust cloud. Firefighters should wear self-contained breathing apparatus and protective clothing.

6. ACCIDENTAL RELEASE MEASURES	
Steps to Be Taken in Case Material is Released or Spilled:	No special precautions are necessary for spills of bulk material. If large quantities of dust are spilled, remove by vacuuming or wet sweeping to prevent heavy concentrations of airborne dust. Follow national and local regulations concerning the disposal of waste.

7. HANDLING AND STORAGE	
Handling	Avoid breathing dusts, wash hands immediately after handling product, and ensure clean water eye wash is readily available.
Storage	Store in original containers in a cool and dry environment.

MSDS - 20%P Ni EU
Revision Number: 1
Revision Date: June7, 2010

8. EXPOSURE CONTROLS	
Respiratory Protection:	If exposure above the PEL or TLV, NIOSH approved respirator for fume or dust, dependent upon the source of airborne contaminant.
Ventilation:	Required if dust or fume is created in handling or working on this material.
Local Exhaust:	Required if dust or fume is created in handling or working on this material.
Mechanical (general):	As above to reduce airborne dust or fume levels.
Protective gloves:	Required for melting, grinding, cutting, and welding operations. Select glove approved for the specific operation.
Eye Protection:	Required melting, grinding, cutting, welding operations. Minimum requirement of safety glasses with side shields for these operations. Melting and welding may require special eye protection including face shields and specially tinted glass. Grinding operations may also require face-shield.
Other Protective Clothing or Equipment:	As required for the work associated with the melting and pouring of molten metal.
Work/Hygiene Practices:	As required for the work associated with the melting and pouring of molten metal.
Other	Use precautions in lifting and prevent dropping of material.

9. PHYSICAL DATA			
Melting Point:	2000° F / 1093° C	Specific Gravity:	8.9 +/- 1.5
Vapor Pressure:	Not Applicable	Vapor Density:	Not Applicable
% Volatile by Volume:	Not Applicable	Evaporation Rate:	Not Applicable
Appearance and Odor: Silver colored metallic solid in ingot form with no odor			

10. REACTIVITY DATA	
Stability:	Stable under normal conditions of use, storage, and transportation.
Conditions to Avoid:	Molten metal may explode on contact with water. Avoid contact of finely divided material with heat, oxidizers, acids, alkalines, and halogenated compounds (as above).
Hazardous Decomposition of Byproducts:	At temperatures above the melting point metal fumes or vapors may be emitted.

11. TOXICOLOGY INFORMATION	
Inhalation	Inhalation of dust may cause nausea.
Skin Contact	May cause skin irritation in susceptible persons.
Eye Contact	May cause eye irritation in susceptible persons.
Ingestion	May Be harmful if swallowed.

12. ECOLOGICAL INFORMATION	
Bio Degradability	Not Bio Degradable
Bio Accumulation	This product has the potential to bio accumulate.
Mobility	No Data Available
Water Solubility	Not Water Soluble

13. DISPOSAL CONSIDERATIONS	
Waste:	Dispose of in accordance with national and local regulations.
Packaging:	Dispose of in accordance with national and local regulations. Do not remove labeling until containers have been cleaned.
Hazardous residue:	May contain hazardous residues. Dispose of in accordance with national and local regulations. Do not remove labeling until containers have been cleaned.

MSDS - 20%P Ni EU
Revision Number: 1
Revision Date: June7, 2010

14. TRANSPORTATION INFORMATION	
UN Proper Shipping Name	Not Classified
AOR/RID - Description	Not Classified
IM DG Proper Shipping Name	Not Classified

15. REGULATORY INFORMATION
Classification according to European directive on classification of hazardous preparations 90/492/EEC.

16. OTHER INFORMATION
This Safety Data Sheet conforms to EC Directive 91/155/EC, as amended by 93/112/EC.
This information relates only to the specific material designated and may not be valid for this material when used in conjunction with any other materials or in any other process.
THIS INFORMATION IS TAKEN FROM SOURCES BELIEVED TO BE RELIABLE; HOWEVER, THE MANUFACTURER MAKES NO WARRANTY AS TO THE ABSOLUTE CORRECTNESS OR SUFFICIENCY OF ANY OF THE FOREGOING OR THAT ADDITIONAL OR OTHER MEASURES MAY NOT BE REQUIRED. IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE SUITABILITY OF THIS PRODUCT AND THE RELEVANCE OF THIS INFORMATION FOR THEIR USE. WE DO NOT ASSUME LIABILITY RESULTING FORM THE USE, HANDLING, STORAGE, OR DISPOSAL OF THIS PRODUCT.

MSDS - 20%P Ni EU
Revision Number: 1
Revision Date: June7, 2010