



## Material Safety Data Sheet (MSDS)

<b>SECTION 1</b>	<b>PRODUCT INFORMATION</b>
------------------	----------------------------

PRODUCT NAME:	PNA Square Dowel
PRODUCT TYPE:	Hot rolled steel bars
COMPANY CONTACT:	PNA Construction Technologies, Inc. 9 Dunwoody Park, Suite 111 Atlanta, GA 30338 800.542.0214

<b>SECTION 2</b>	<b>GENERAL INFORMATION</b>
------------------	----------------------------

IDENTITY:	Hot Rolled Bars
FAMILY:	Inorganic Compounds

<b>SECTION 3</b>	<b>HAZARDOUS CONSTITUENTS</b>
------------------	-------------------------------

Constituent	OSHA PEL (mg/M3)	ACGIH TLV (mg/M3)	% Range	CAS #
Aluminum:				
Fume	5.0	5.0	.001-.100	7429-90-5
As dust	5.0	---		
Carbon:				
Not Listed	---	---	.01-1.10	7440-44-0
Chromium:	0.5	0.5	.05-.90	7440-47-3
Soluble Cr salts	1.0	0.5		
Copper (metal):				
As dust	1.0	1.0	.10-1.0	7440-50-8
As Fume	0.1	0.2		
Iron:				
Iron Oxide Fume	10.0	---	98-99	7439-89-6
Molybdenum:				
Fume	0.1	0.2	.01-.15	7439-98-7
Nickel (metal):	1.0	1.0	.05-.75	7440-02-0
Soluble Ni compounds	1.0	1.0		
Manganese:				
Fume	1.0	1.0	.25-1.65	7439-96-5
Phosphorus (yellow)	0.1	---	.06 max	7723-14-0
Silicon:				
Dust	15.0	---	.08-.50	7440-21-3
Sulfur:				
Sulfur Dioxide	13.0	5.0	.001-.08	7446-09-5

<b>SECTION 4</b>	<b>PHYSICAL AND CHEMICAL CHARACTERISTICS</b>
------------------	--

APPEARANCE AND ODOR	Dark gray, odorless, metal.
BOILING POINT	±5000°F



## Material Safety Data Sheet (MSDS)

MELTING POINT	Approximately 2500°F
pH	N/A
SPECIFIC GRAVITY	(H <sub>2</sub> O = 1) 2-8.2 (mm Hg)
DENSITY (AT 15.6°C)	N/A
VAPOR PRESSURE	N/A
VAPOR DENSITY	N/A
% VOLATILE, BY VOLUME	N/A
SOLUBILITY IN WATER	Insoluble
EVAPORATION RATE (BUTYL ACETATE = 1)	N/A
OTHER PHYSICAL AND CHEMICAL DATA	None

<b>SECTION 5 FIRE AND EXPLOSION DATA</b>	
FLASH POINT (°C) N/A	AUTOIGNITION TEMPERATURE N/A
FLAMMABILITY LIMIT IN AIR (% BY VOL)	Lower N/A
	Upper N/A
EXTINGUISHING MEDIA	N/A
SPECIAL FIRE FIGHTING PROCEDURES	N/A
UNUSUAL FIRE AND EXPLOSION HAZARDS	N/A

<b>SECTION 6 STABILITY AND REACTIVITY</b>	
STABILITY	Stable
CONDITIONS TO AVOID	N/A
HAZARDOUS POLYMERIZATION	N/A
INCOMPATIBILITY (MATERIALS TO AVOID)	Strong acids
HAZARDOUS DECOMPOSITION PRODUCTS	Hydrogen gas



## Material Safety Data Sheet (MSDS)

<b>SECTION 7 HAZARDS IDENTIFICATION</b>	
EFFECTS OF OVEREXPOSURE	No toxic effects would be expected from inert solid form. Inhalation of metal dust and fumes may result from further processing of the material by the user, particularly during welding, burning, cutting, grinding and machining activities
ACUTE	Short-term intensive exposure to dust may result in irritation to eyes, mucous membranes and respiratory tract. Steel recently produced may be extremely hot.
CHRONIC	Sever pneumonitis, pulmonary disease
CARCINOGENIC	NTP: nickel, chromium IARC: nickel, chromium OSHA: none
SIGNS AND SYMPTOMS OF EXPOSURE	Nausea, tightness of chest, fever, irritation of eyes, nose, throat and skin.
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE	Chronic lung disease, allergic conditions.
EMERGENCY AND FIRST AID PROCEDURES	Standard first aid procedures – remove to fresh air.

<b>SECTION 8 PRECAUTIONS FOR SAFE HANDLING AND USE</b>	
STEPS TO BE TAKEN IN CASE OF RELEASE OR SPILL	N/A
WASTE DISPOSAL METHOD	Material should be reclaimed for re-use; follow local, State and Federal solid waste disposal requirements.

<b>SECTION 9 CONTROL MEASURES</b>	
RESPIRATORY PROTECTION	Dust/fume respirator.
LOCAL EXHAUST	As required to meet PEL.
PROTECTIVE GLOVES	As needed based on operations
EYE PROTECTION	As needed
OTHER PROTECTIVE CLOTHING OR EQUIPMENT	May be needed for grinding. Heat resistant face protection, clothing, boots and/or gloves may be necessary.

The information contained herein is based on the data available to us and is believed to be correct. However, PNA Construction Technologies, Inc. makes no warranty, expressed or implied, regarding the accuracy of this data or the results to be obtained from the use thereof. PNA Construction Technologies, Inc. assumes no responsibility for the use of the product described herein.

©COPYRIGHT 2007 by PNA Construction Technologies, Inc. Diamond Dowel® is a registered trademark of PNA Construction Technologies, Inc.