MATERIAL SAFETY DATA SHEET
STEEL PRODUCTS

CODE NO.: na	
ORIGINAL ISSUE DATE: 11/2/10	REVISED:

I. IDENTIFICATION

PRODUCT NAME: Barbed tape

COMMON NAME (S): Razor wire, Silent Swordsman, Concertina wire, Barbed tape

INFORMATION AND EMERGENCY TELEPHONE NUMBERS
(708) 339-1610

MANUFACTURER:
Allied Tube & Conduit Corp
16100 South Lathrop Avenue
Harvey, IL 60426

II. INGREDIENTS AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMITS

Note: Steel Products under normal conditions do not present an inhalation, ingestion, or contact health hazard (See Section VI).

BASE METAL, ALLOYING ELEMENTS AND METALLIC COATINGS	% WEIGHT	EXPOSURE LIMITS* During operations (such as welding, burning, or cutting) where dust or fumes are generated.	
		OSHA PEL	ACGIH TLV (1992-1993)
Base Metal: Iron CAS 7439-89-6	>70%	10 mg/M^3 for total particulate as iron oxide – total dust 5 mg/M^3 for total particulate-respirable fraction	5 mg/M^3 for iron oxide fumes
Alloying Elements: Carbon CAS 7440-44-0	<0.2%	10 mg/M^3 for total dust (pnor) [d] 5mg/M^3 for respirable fraction (pnor) [d]	10 mg/M^3 for total dust (pnos) [e] 3 mg/M^3 for respirable fraction (pnos) [e]
*Manganese CAS 7439-96-5	<2%	(c) 5 mg/M^3 – compounds (b) 3 mg/M^3 – fume 1 mg/M^3 – fume	5 mg/M^3 – dust & compounds 1 mg/M^3 – fume (b) 3 mg/M^3 - fume
*Phosphorus CAS 7723-14-0	<0.1%	0.1 mg/M^3 for total dust (pnor) [d] 5mg/M^3 for respirable fraction (pnor) [d]	0.1 mg/M^3 for total dust (pnos) [e] 3 mg/M^3 for respirable fraction (pnos) [e]
Sulfur CAS 774-34-9	<0.1%	2 mg/M^3 as sulfur dioxide (b) 10 mg/M^3 – as sulfur dioxide	2 mg/M^3 as sulfur dioxide (b) 13 mg/M^3 – as sulfur dioxide
Silicon CAS 7440-21-3	<1%	15 mg/M^3 for total dust (pnor) [d]	10 mg/M^3 for respirable fraction (pnor) [d]
Chromium CAS 7440-47-3	<18%	1 mg/M^3 as metal	0.5 mg/M^3 as metal
Nickel CAS 7440-02-0	<8%	1 mg/M^3 for total dust (pnor) [d]	1 mg/M^3 for total dust (pnor) [d]
Molybdenum CAS 7439-98-7	<0.5%	15 mg/M^3 for total dust (pnor) [d]	10 mg/M^3 for total dust (pnos)
Copper CAS 7440-50-8	<2.3%	1 mg/M^3 – dust 0.1 mg/M^3 – fume	0.2 mg/M^3 – fume
(b) Denotes short term exposure limit (STEL). (c) Denotes "ceiling limit" which is not to be exceeded at any time. * Subject to Section EPCRA 313 reporting. (d) Particulates not otherwise regulated-			

nuisance or inert dusts not listed as a specific name (e) Particulates not otherwise specified- nuisance or inert dusts not containing silica or asbestos			

III. PHYSICAL DATA

Melting Point
Base Material: 2750^{o} F
Appearance Gray-silvery Metallic,
Odor: none

IV. FIRE AND EXPLOSION DATA

Steel Products in the Solid State present no fire or explosion hazard.

V. REACTIVITY DATA

Stable under normal conditions of use, storage, and transport. Will react with strong acid to liberate hydrogen.

VI. HEALTH HAZARD DATA

Note: Steel products under normal conditions do not present an inhalation, ingestion, or contact health hazard. However, operations such as burning, welding, sawing, brazing, grinding, and possibly machining, etc, which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, may present health hazards.

EFFECTS OF OVEREXPOSURE:

Major Exposure Hazard

INHALATION	SKIN CONTACT	EYE CONTACT	INGESTION
X			

Chronic inhalation of high concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

The inhalation of high concentrations of freshly formed oxide fumes and dusts of Manganese, Copper, Chromium, Nickel, Molybdenum and/or Zinc in the respirable particle size range can cause an influenza-like illness termed metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness and irritation of the throat, followed by weakness, muscle pain, and chills. No long term effects of metal fume fever have been noted.

EMERGENCY AND FIRST AID PROCEDURES
For overexposure to airborne fumes and particulates, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly.

Treat metal fume fever by bed rest and administer a pain and fever reducing medication.

VII. SPILL OR LEAK PROCEDURES

Not applicable to steel in the solid state.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY: For welding or burning – NIOSH/MSHA approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure.

SKIN: Protective gloves should be worn as required for welding, burning, or handling operations.

EYE: Use safety glasses or goggles as required for welding, burning or handling operations.

VENTILATION: Local exhaust ventilation should be provided when sawing, grinding or machining to prevent excessive dust or fume exposure. During welding, burning or brazing please follow the ANSI Standard Z49.1 “Safety in Welding and Cutting”.

OTHER PROTECTIVE EQUIPMENT: Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

OTHER COMMENTS:

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with chronic respiratory disorders (ie asthma, chronic bronchitis, emphysema, etc) may be adversely affected by any fume or airborne particulate matter exposure.

MATERIAL SAFETY DATA SHEET
STEEL PRODUCTS

JOSEPH T RYERSON & SON INC -- STAINLESS STEELS 301 -- 9510-00N032583

========== Product Identification ==========

Product ID:STAINLESS STEELS 301
MSDS Date:11/08/1985
FSC:9510
NIIN:00N032583
MSDS Number: BNSSS
=== Responsible Party ===
Company Name:JOSEPH T RYERSON & SON INC
Address:2621 W 15TH PLACE
City:CHICAGO
State:IL
ZIP:60608
Country:US
Info Phone Num:312-762-2121
Emergency Phone Num:312-762-2121
CAGE:52660
=== Contractor Identification ===
Company Name:JOSEPH T RYERSON AND SONS INC.;SUB INLAND STEEL
Address:2558 W 16TH ST
Box:City:CHICAGO
State:IL
ZIP:60608
Country:US
Phone:312-762-2121
CAGE:52660
Company Name:JOSEPH T. RYERSON & SON, INC. SUB OF INLAND STEEL
Address:2621 W. 15TH PLACE
Box:City:CHICAGO
State:IL
ZIP:60608
Country:US
Phone:312-762-2121
CAGE:9Y791

========== Composition/Information on Ingredients ==========

Ingred Name:IRON
CAS:7439-89-6
RTECS #:NO4565500
Fraction by Wt: >70%
OSHA PEL:10 MG/M3 (FE*2O*3)
ACGIH TLV:5 MG/M3 (FE*2O*3)

Ingred Name:MANGANESE (SARA III)
CAS:7439-96-5
RTECS #:OO9275000
Fraction by Wt: <2%
OSHA PEL:(C) 5 MG/M3 DUST
ACGIH TLV:5 MG/M3 DUST 9293

Ingred Name:CARBON
CAS:7440-44-0
RTECS #:FF5250100
Fraction by Wt: <0.2%
OSHA PEL:15 MG/M3 TDUST
ACGIH TLV:2 MG/M3 TDUST; 9293

Ingred Name:PHOSPHOROUS (YELLOW) (SARA III)
CAS:7723-14-0
RTECS #:TH3500000
Fraction by Wt: <0.1%
OSHA PEL:0.1 MG/M3
ACGIH TLV:0.1 MG/M3
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:SULFUR
CAS:7704-34-9
RTECS #:WS4250000
Fraction by Wt: <0.1%
OSHA PEL:2 PPM (SO*2)
ACGIH TLV:2 PPM (SO*2)

Ingred Name:SILICON
CAS:7440-21-3
RTECS #:VW0400000
Fraction by Wt: <1%
OSHA PEL:15 MG/M3 TDUST
ACGIH TLV:10 MG/M3 TDUST; 9293

Ingred Name:CHROMIUM (SARA III)
CAS:7440-47-3
RTECS #:GB4200000
Fraction by Wt: <18%
OSHA PEL:1 MG/M3
ACGIH TLV:0.5 MG/M3
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:NICKEL (SARA III)
CAS:7440-02-0
RTECS #:QR5950000
Fraction by Wt: <8%
OSHA PEL:1 MG/M3

ACGIH TLV:1 MG/M3

Ingred Name:COPPER (SARA III)
CAS:7440-50-8
RTECS #:GL5325000
Fraction by Wt: <2.3%
OSHA PEL:0.1MG/M3 FUME;1 DUST
ACGIH TLV:0.2MG/M3 FUME
EPA Rpt Qty:5000 LBS
DOT Rpt Qty:5000 LBS

Ingred Name:MOLYBDENUM
CAS:7439-98-7
RTECS #:QA4680000
Fraction by Wt: <0.5%
OSHA PEL:15 MG/M3 TDUST
ACGIH TLV:10 MG/M3; 9293

PERFORMANCE ALLOYS -- STAINLESS STEEL BARE WELDING WIRE, 430
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Cas: 7440-47-3
RTECS #: GB4200000
Name: CHROMIUM; (CR) (LIMITS FOR CHROMIUM (VI) BY MFR - OSHA PEL: 0.1 MG/M3;
ACGIH TLV: 0.05 MG/M3.
% low Wt: 15.5
% high Wt: 17.
OSHA PEL: 1 MG/M3
ACGIH TLV: 0.5 MG/M3
ACGIH STEL: NOT ESTABLISHED
EPA Rpt Qty: 1 LB
DOT Rpt Qty: 1 LB

Cas: 7440-02-0
RTECS #: QR5950000
Name: NICKEL; (NI) (SOLUBLE) (ACGIH TLV MG/M3: 0.10 (MFR))
Percent by Wt: .6
Other REC Limits: TLV:0.1 MG/M3 (M)
OSHA PEL: 1 MG/M3
ACGIH TLV: 1 MG/M3
ACGIH STEL: NOT ESTABLISHED

Cas: 7439-98-7
RTECS #: QA4680000
Name: MOLYBDENUM; (MO) (SOLUBLE) (ACGIH TLV MG/M3: 5.00 (MFR))
Percent by Wt: .75
Other REC Limits: TLV:5 MG/M3 (MFR)
OSHA PEL: 5 MG/M3
ACGIH TLV: 10 MG/M3
ACGIH STEL: NOT ESTABLISHED

Cas: 7439-96-5
RTECS #: OO9275000
Name: MANGANESE; (MN) (ACGIH TLV MG/M3: 1.00(FUME) (MFR))
Percent by Wt: .6
Other REC Limits: TLV:1 MG/M3 (M)
OSHA PEL: C5 MG/M3
ACGIH TLV: 5 MG/M3
ACGIH STEL: 3 MG/M3

Cas: 60676-86-0
RTECS #: VV7328000
Name: SILICA, CRYSTALLINE-FUSED; (SI) (SILICON (SIO*2 AMPHOROUS RESPIRABLE))
Percent by Wt: .5
OSHA PEL: 0.08 MG/M3
ACGIH TLV: 0.1 MG/M3
ACGIH STEL: NOT ESTABLISHED

Cas: 7440-50-8
RTECS #: GL5325000
Name: COPPER; (CU) (COPPER (FUME)) (LIMITS FOR COPPER (FUME) BY MFR - OSHA PEL:0.1 MG/M3; ACGIH TLV: 0.2 MG/M3.
Percent by Wt: .75
OSHA PEL: 1 MG/M3
ACGIH TLV: 1 MG/M3
ACGIH STEL: NOT ESTABLISHED
EPA Rpt Qty: 5000 LBS
DOT Rpt Qty: 5000 LBS

Cas: 7439-89-6
RTECS #: NO4565500
Name: IRON; (FE)
% Wt: BALANCE